

Pezzuto, Helen

From: STIC-EIC1700@uspto.gov
Sent: Wednesday, February 28, 2007 6:31 PM
To: Pezzuto, Helen
Subject: Database Search Request Confirmation, Serial Number: 10/655,343

Examiner HELEN PEZZUTO:

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If you have any immediate questions you can contact us at 571-272-2530.

Thank you very much for using the EIC. The text of your request is below.

Your name: **HELEN PEZZUTO**
Email address: **HELEN.PEZZUTO@USPTO.GOV**
Employee number: **70058**
Art Unit: **GROUP ART UNIT 1713**
Office Location: **REM 10A11**
Phone Number: **(571)272-1108**
Mailbox Number:

Case serial number: **10/655,343**

Class / Subclass(es): **526/271, 280, 281, 304, 307.5, 332, 333, 347**

Earliest Priority Filing Date: **9/4/03**

Format preferred for results: **E-mail**

Search Topic Information:

Claims 1-11 are elected and are currently under consideration. A polymer containing l, m, and n recurring units defined in claim 1, and further defined in claims 4-11. Species l, m, and n are further elected on 2/16/07. For unit l, R1=H, R2=H, X=C6 aromatic group (i.e. styrene). Elected m is norbornene derivative. For unit n, R3=O(CH₂CH₂O)pCH₃, R4=O-M+. See election on 2/16/07 if needed.

Special Instructions and Other Comments:

Please give search request to Ms. K. Fuller. Many, many thanks!!

Pezzuto, Helen

From: Fuller, Kathleen
Sent: Thursday, March 08, 2007 11:44 AM
To: Pezzuto, Helen
Subject: 10/655343



pez655.rtf

Although the applicant did restrict the claims per 2/17/07 they did not mention whether all three elements have to be there. Claim 1 says that each element can be zero provided that at least 2 of the elements are not zero. I did 2 searches the first with 2 of the elements gave 1306 polymers. Limiting with concrete# produces 23 CA references. The applicant is answers 5. Note that the ethylene oxide/propylene oxide and the metal salt is not structurally indexed but only mentioned as a derivative preparation of the polymer. Answers 7, 8, 9 ,16,18 and 23 have good dates and are worth looking at.

With all 3 elements present there were 1098 polymers and 19 CA references combined with concrete#. Removing the answers already printed left 17 CA references. None of these mention an alkali metal salt but in some cases everything else per the claims is there..

Kathleen Fuller
team leader EIC1700
Remsen 4B28
571/272-2505

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d que 147

L15	34493 SEA FILE=REGISTRY ABB=ON	103.10.3/RID
L19	74818 SEA FILE=REGISTRY ABB=ON	100-42-5/CRN
L23	364 SEA FILE=REGISTRY ABB=ON	L15 AND L19
L24	232 SEA FILE=REGISTRY ABB=ON	L15 AND (LI OR NA OR K OR RB OR CS)/ELS
L25	55 SEA FILE=REGISTRY ABB=ON	L24 AND PMS/CI
L26	364 SEA FILE=REGISTRY ABB=ON	L23 AND PMS/CI

KATHLEEN FULLER EIC1700 571-272-2505

L27 3499 SEA FILE=REGISTRY ABB=ON L19 AND (LI OR NA OR K OR RB OR CS) /ELS
 L28 3493 SEA FILE=REGISTRY ABB=ON L27 AND PMS/CI
 L44 3902 SEA FILE=REGISTRY ABB=ON L25 OR L26 OR L28
 L45 1306 SEA FILE=REGISTRY ABB=ON L44 NOT (N OR S OR P OR SI)/ELS
 L46 2115 SEA FILE=HCAPLUS ABB=ON L45
 L47 23 SEA FILE=HCAPLUS ABB=ON L46 AND CONCRETE#

=> d 147 bib abs ind hitstr 1-23

L47 ANSWER 1 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN
 AN 2006:759938 HCAPLUS Full-text
 DN 145:172352
 TI Admixtures for fly ash containing high concentration of unburnt carbon, and **concrete** mix containing fly ash and same admixtures
 IN Nakashita, Akifumi; Nakamura, Yasuo; Mitsui, Takeo; Yonezawa, Toshio; Wada, Naoya; Ando, Shinichiro; Kinoshita, Mitsuo; Iida, Masahiro
 PA Takenaka Komuten Co., Ltd., Japan; Takenaka Civil Engineering & Construction Co., Ltd.; Takemoto Oil and Fat Co., Ltd.; Chugoku Electric Power Co.
 SO Jpn. Kokai Tokkyo Koho, 21 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2006199953	A	20060803	JP 2005-369473	20051222
PRAI	JP 2004-373996	A	20041224		
OS	MARPAT 145:172352				

AB The admixts. contain (A) 50-98 weight% of graft copolymer salts, (B) 1-45 weight% of organic amine ethylene oxide adducts, and (C) 0.1-5 weight% of organic phosphate esters. The (A) graft copolymer salts are prepared by a process consisting of steps of (1) radically copolymerg. 50-65:35-50 mol.% of maleic anhydride and monomers CH₂:CHCH₂OAlOR₁ (R₁ = Me, acetyl, H; Al = OH- removed residue of polyethylene oxide, or ethylene oxide-propylene oxide copolymer with ≤150 oxyalkylene units), (2) further graft copolymerg. 0.05-5.0 weight parts of polyethers R₂OAlOH (R₂ = C₈-20 aliphatic hydrocarbyl; A2 = OH- removed residue of ethylene oxide-propylene oxide block copolymer with 23-70 oxyalkylene units) (to 100 weight parts of copolymers obtained in 1), and (3) partially/wholly neutralization with alkali metal hydroxides, alkaline earth hydroxides, and/or amines. The (B) organic amine ethylene oxide adducts are represented by H(OCH₂CH₂)_nN(R₃)(CH₂CH₂O)_mH (n, m = integer of 1-15; n + m = 2-20; R₃ = C₈-20 aliphatic hydrocarbyl). The (C) organic phosphate esters are represented by M₁O_p(:O)(OM₂)_qOR₄ [R₄ = C₈-20 aliphatic hydrocarbyl; M₁-2 = H, alkali metal, alkaline earth metal, (organic) ammonium]. The admixts. inhibit undesired phenomena of fly-ash-containing **concrete** mix, i.e., increase of necessary amts. of high-performance AE water-reducing agents, increase of slump loss, drop of resistance to freezing and thawing action, and drop of strength.

CC 58-2 (Cement, Concrete, and Related Building Materials)
 Section cross-reference(s): 38

ST fly ash **concrete** admixture maleic anhydride polyoxyalkylene graft copolymer; block graft maleic anhydride polyoxyalkylene copolymer fly ash admixture; ethylene oxide propylene oxide maleic anhydride copolymer **concrete** admixture; polyethylene glycol alkylamine adduct fly ash **concrete** admixture; alkyl phosphate fly ash **concrete** admixture

IT **Concrete** modifiers

(admixts.; admixts. for (concrete mix containing) fly ash with high unburnt carbon content)

IT Polyoxalkylenes, preparation

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(block, graft polymers, salts; in admixts. for (concrete mix containing) fly ash with high unburnt carbon content)

IT Concrete

(fly ash; admixts. for (concrete mix containing) fly ash with high unburnt carbon content)

IT Ashes (residues)

(fly; admixts. for (concrete mix containing) fly ash with high unburnt carbon content)

IT 901122-66-5P, Ethylene oxide-maleic anhydride-polyethylene glycol allyl methyl ether-propylene oxide block graft copolymer sodium salt
901448-44-0P, Ethylene oxide-maleic anhydride-polyethylene glycol monoacetate monoallyl ether-propylene oxide block graft copolymer sodium salt 901448-52-0P 901448-61-1P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(in admixts. for (concrete mix containing) fly ash with high unburnt carbon content)

IT 17026-83-4 26635-92-7 31017-83-1 52215-22-2, Monoctyl phosphate potassium salt 73750-10-4

RL: TEM (Technical or engineered material use); USES (Uses)
(in admixts. for (concrete mix containing) fly ash with high unburnt carbon content)

IT 901448-61-1P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(in admixts. for (concrete mix containing) fly ash with high unburnt carbon content)

RN 901448-61-1 HCPLUS

CN 2,5-Furandione, polymer with ethenylbenzene, methyloxirane and oxirane, block, graft, sodium salt (9CI) (CA INDEX NAME)

CM 1

CRN 901448-60-0

CMF (C8 H8 . C4 H2 O3 . C3 H6 O . C2 H4 O)x

CCI PMS

CM 2

CRN 108-31-6

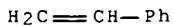
CMF C4 H2 O3



CM 3

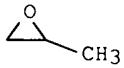
CRN 100-42-5

CMF C8 H8



CM 4

CRN 75-56-9
 CMF C3 H6 O



CM 5

CRN 75-21-8
 CMF C2 H4 O



L47 ANSWER 2 OF 23 HCPLUS COPYRIGHT 2007 ACS on STN
 AN 2006:434398 HCPLUS Full-text
 DN 144:455176
 TI preparation of an additive for **concrete**, based on salts of maleic polymers
 IN Tsai, Mei-Hung; Shiu, Yuan-Jung
 PA Gwan Chian Industrial Co., Ltd., Taiwan
 SO Taiwan., 4 pp.
 CODEN: TWXXA5
 DT Patent
 LA Chinese
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI TW 226318	B	20050111	TW 2003-92112919	20030513
PRAI TW 2003-92112919		20030513		

AB **Concrete** admixt. additives are derived from reacting a mixture of olefins/cyclic olefins-maleic anhydride copolymers and methoxy polyalkylene glycol amines and/or polyalkylene glycol monoalkyl ethers, or a mixture of styrene-maleic anhydride copolymers and methoxy polyalkylene glycol amines and/or polyalkylene glycol monoalkyl ethers, or a mixture of styrene-olefins/cyclic olefins-maleic anhydride terpolymers and methoxy polyalkylene glycol amines and/or polyalkylene glycol monoalkyl ethers. These reactions lead to formation of a kind of carboxylic salt containing polymer, which can be used alone in **concrete**. Only a small amount of this substance is needed to provide excellent water reduction, high **concrete** flowability and high early strength.

IC ICM C04B024-26
 CC 58-2 (Cement, Concrete, and Related Building Materials)

Section cross-reference(s): 35

ST olefin maleic copolymer polyoxyalkyleneamine salt **concrete** additive; cycloolefin maleic copolymer polyoxyalkyleneamine salt **concrete** additive; styrene olefin maleic copolymer polyoxyalkyleneamine salt **concrete** additive; polyoxyalkylene monoether salt olefin maleic copolymer **concrete** additive

IT Polyoxyalkylenes, preparation
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (ethers, reaction products, with maleic copolymers, metal salts; preparation of an additive for **concrete**, based on salts of maleic polymers)

IT Butadiene rubber, preparation
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (maleated, Ricon 130MA-13, reaction products, with ethylene oxide-propylene oxide copolymer amines or monoalkyl ethers, metal salts; preparation of an additive for **concrete**, based on salts of maleic polymers)

IT **Concrete** modifiers
(preparation of an additive for **concrete**, based on salts of maleic polymers)

IT 9003-17-2DP, maleated
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (butadiene rubber, Ricon 130MA-13, reaction products, with ethylene oxide-propylene oxide copolymer amines or monoalkyl ethers, metal salts; preparation of an additive for **concrete**, based on salts of maleic polymers)

IT 9011-13-6DP, reaction products with ethylene oxide-propylene oxide copolymer amines or monoalkyl ethers, metal salts 9063-06-3DP, reaction products with maleic copolymers, metal salts 26678-74-0DP, reaction products with ethylene oxide-propylene oxide copolymer amines or monoalkyl ethers, metal salts 83713-01-3DP, reaction products with maleic copolymers, metal salts **163797-99-7DP**, Norbornene-maleic anhydride-styrene copolymer, reaction products with ethylene oxide-propylene oxide copolymer amines or monoalkyl ethers, metal salts
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (preparation of an additive for **concrete**, based on salts of maleic polymers)

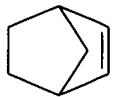
IT 26678-74-0P **163797-99-7P**, Norbornene-maleic anhydride-styrene copolymer
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation of an additive for **concrete**, based on salts of maleic polymers)

IT **163797-99-7DP**, Norbornene-maleic anhydride-styrene copolymer, reaction products with ethylene oxide-propylene oxide copolymer amines or monoalkyl ethers, metal salts
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (preparation of an additive for **concrete**, based on salts of maleic polymers)

RN 163797-99-7 HCPLUS

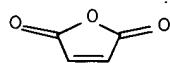
CN 2,5-Furandione, polymer with bicyclo[2.2.1]hept-2-ene and ethenylbenzene (9CI) (CA INDEX NAME)

CRN 498-66-8
CMF C7 H10



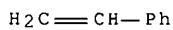
CM 2

CRN 108-31-6
CMF C4 H2 O3



CM 3

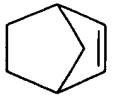
CRN 100-42-5
CMF C8 H8



IT 163797-99-7P, Norbornene-maleic anhydride-styrene copolymer
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
(Reactant or reagent)
(preparation of an additive for concrete, based on salts of maleic
polymers)
RN 163797-99-7 HCAPLUS
CN 2,5-Furandione, polymer with bicyclo[2.2.1]hept-2-ene and ethenylbenzene
(9CI) (CA INDEX NAME)

CM 1

CRN 498-66-8
CMF C7 H10



CM 2

CRN 108-31-6
 CMF C4 H2 O3



CM 3

CRN 100-42-5
 CMF C8 H8

H₂C=CH-Ph

L47 ANSWER 3 OF 23 HCPLUS COPYRIGHT 2007 ACS on STN
 AN 2005:1220441 HCPLUS Full-text
 DN 143:478934
 TI Heat-storing microcapsules, dispersions containing the microcapsules and their uses
 IN Ikegami, Koshiro; Ishiguro, Mamoru
 PA Mitsubishi Paper Mills, Ltd., Japan
 SO Jpn. Kokai Tokyo Koho, 22 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005320527	A	20051117	JP 2005-110286	20050406
PRAI	JP 2004-113188	A	20040407		
	JP 2004-113189	A	20040407		
OS	MARPAT 143:478934				
AB	The microcapsules contain encapsulated compds. of R ₁ X ₂ (R ₁ ,R ₂ = C \geq 6 hydrocarbyl groups; X = linking groups containing hetero atoms), R ₃ (YR ₄) _n (R ₃ = n-valent hydrocarbyl groups; R ₄ = C \geq 6 hydrocarbyl groups; Y = linking groups containing hetero atoms) or/and A(ZR ₅) _m (A = m-valent atoms, groups of atoms, linking groups; R ₅ = C \geq 6 hydrocarbyl groups; Z = linking groups containing hetero atoms). The dispersions are obtained by dispersing the microcapsules in a medium which can be removed (e.g., by spray drying) to give a powder for use in heat-storing concrete, fabric products and air conditioning system through its supporting. Thus, vigorously mixing 100 parts a 5% aqueous solution of styrene-maleic anhydride copolymer sodium salt at pH 4.5 with 80 parts hexadecyl palmitate gave an emulsion containing particles with average diameter 5.0 μ m. Combining an initial condensation product of melamine 8 and HCHO (37% aqueous solution) 11 in water 20 parts at pH 8 with the emulsion, mixing at 70° for 2 h and adjusting the pH to 9 gave encapsulated microparticles (microcapsules) with volume-average particle diameter 5.2 μ m, free heat-storing compound content 90 ppm and melting range 8°.				
IC	ICM C09K005-06				
	ICS D06M023-12; F24D011-00				
CC	38-3 (Plastics Fabrication and Uses)				

- ST hexadecyl palmitate heat storing substance microcapsule dispersion; melamine resin encapsulation heat storing microcapsule; air conditioning heat storing microcapsule powder; fabric heat storing microcapsule powder prodn; **concrete** heat storing microcapsule powder prodn
- IT Aminoplasts
RL: TEM (Technical or engineered material use); USES (Uses)
(encapsulant; heat-storing microcapsules, dispersions containing the microcapsules and solids containing the microcapsules and their use)
- IT Polyureas
RL: TEM (Technical or engineered material use); USES (Uses)
(encapsulants; heat-storing microcapsules, dispersions containing the microcapsules and solids containing the microcapsules and their use)
- IT Air conditioning
Clothing
Concrete
Emulsifying agents
Heat storage
Microcapsules
Textiles
(heat-storing microcapsules, dispersions containing the microcapsules and solids containing the microcapsules and their use)
- IT Amines, uses
Esters, uses
Ketones, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(heat-storing substance; heat-storing microcapsules, dispersions containing the microcapsules and solids containing the microcapsules and their use)
- IT Ethers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(heat-storing substances; heat-storing microcapsules, dispersions containing the microcapsules and solids containing the microcapsules and their use)
- IT 9002-89-5, Poval 117 25736-61-2, Maleic anhydride-styrene copolymer sodium salt 28258-28-8, Ethylene-maleic anhydride copolymer sodium salt
RL: MOA (Modifier or additive use); USES (Uses)
(emulsifier; heat-storing microcapsules, dispersions containing the microcapsules and solids containing the microcapsules and their use)
- IT 9003-08-1, Formaldehyde-melamine copolymer 34903-84-9,
Formaldehyde;resorcinol;urea copolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(encapsulant; heat-storing microcapsules, dispersions containing the microcapsules and solids containing the microcapsules and their use)
- IT 86176-09-2, Diethylenetriamine-Sumidur 44V20 copolymer 869337-66-6,
Adeka EDP 450-methylenebis(4-cyclohexyl isocyanate) copolymer
869476-09-5, Adeka EDP 450-Desmodur W copolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(encapsulants; heat-storing microcapsules, dispersions containing the microcapsules and solids containing the microcapsules and their use)
- IT 102-88-5, Trioctadecylamine 115-83-3, Pentaerythritol tetrastearate 504-53-0, Diheptadecyl ketone 540-10-3, Hexadecyl palmitate 1654-86-0, Decyl decanoate 2040-64-4, Dodecyl myristate 3234-84-2, Octadecyl laurate 13945-76-1, Dodecyl laurate 16260-09-6, N-Oleylpalmitamide 26720-21-8, Adipic acid dihexadecyl ester 42231-50-5, Dodecyl decanoate 42232-25-7, Hexyl palmitate 42232-29-1, Dodecyl palmitate 58886-94-5, Hexacosyl stearate 96980-60-8, Dodecyl heptanoate
RL: TEM (Technical or engineered material use); USES (Uses)
(heat-storing substance; heat-storing microcapsules, dispersions containing the microcapsules and solids containing the microcapsules and their use)

IT 10094-45-8, N-Staryluerucamide
 RL: MOA (Modifier or additive use); USES (Uses)
 (over-chill preventer; heat-storing microcapsules, dispersions containing
 the microcapsules and solids containing the microcapsules and their use)

IT 25736-61-2, Maleic anhydride-styrene copolymer sodium salt
 RL: MOA (Modifier or additive use); USES (Uses)
 (emulsifier; heat-storing microcapsules, dispersions containing the
 microcapsules and solids containing the microcapsules and their use)

RN 25736-61-2 HCPLUS

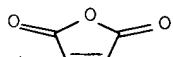
CN 2,5-Furandione, polymer with ethenylbenzene, sodium salt (9CI) (CA INDEX
 NAME)

CM 1

CRN 9011-13-6
 CMF (C8 H8 . C4 H2 O3)x
 CCI PMS

CM 2

CRN 108-31-6
 CMF C4 H2 O3



CM 3

CRN 100-42-5
 CMF C8 H8



L47 ANSWER 4 OF 23 HCPLUS COPYRIGHT 2007 ACS on STN
 AN 2005:822429 HCPLUS Full-text
 DN 143:231496
 TI Aqueous dispersions for primers used for concrete or mortar
 surfaces
 IN Otsuka, Masahiko; Itamochi, Takahiro
 PA Asahi Kasei Chemicals Corporation, Japan
 SO Jpn. Kokai Tokkyo Koho, 15 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2005220142	A	20050818	JP 2004-26246	20040203
PRAI JP 2004-26246		20040203		

AB Title dispersions are prepared by emulsion polymerization of 0.5-6% ethylenic unsatd. monocarboxylic acids and 94-99.5% other vinyl compds. and show a COOH distribution of 5-25% (equiv ratio) in the aqueous layers and 20-40% on the

KATHLEEN FULLER EIC1700 571-272-2505

aqueous dispersion particle surfaces. An aqueous dispersion of 2-ethylhexyl acrylate-methacrylic acid-Me methacrylate-styrene graft copolymer Na salt showed COOH distribution of 10% in aqueous layer and 25% on particle surfaces; the dispersion was diluted and spread on a concrete plate, aged, covered with a cement/mortar composition, and aged to form a product showing no cracks even after JIS A 6909 hot/cold test and adhesion 1.9 N/mm² initially and 1.5 N/mm² after 24 h in 20° water.

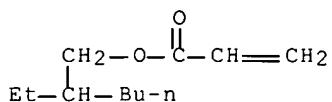
- IC ICM C09D157-10
ICS C09D005-00
- CC 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): 58
- ST carboxy distribution control aq acrylic polymer dispersion primer
concrete; mortar primer aq acrylic polymer dispersion carboxy
distribution control
- IT Primers (paints)
(aqueous acrylic dispersion with controlled COOH distribution as primers
for concrete or mortar surfaces)
- IT Acrylic polymers, uses
RL: IMF (Industrial manufacture); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(carboxy-containing, graft; aqueous acrylic dispersion with controlled COOH
distribution as primers for concrete or mortar surfaces)
- IT Polymerization
(emulsion, multistage; aqueous acrylic dispersion with controlled COOH
distribution as primers for concrete or mortar surfaces)
- IT Concrete
Mortar
(substrates; aqueous acrylic dispersion with controlled COOH distribution
as primers for concrete or mortar surfaces)
- IT 832079-39-7P, 2-Ethylhexyl acrylate-methacrylic acid-methyl
methacrylate-styrene graft copolymer sodium salt
RL: IMF (Industrial manufacture); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(aqueous acrylic dispersion with controlled COOH distribution as primers
for concrete or mortar surfaces)
- IT 832079-39-7P, 2-Ethylhexyl acrylate-methacrylic acid-methyl
methacrylate-styrene graft copolymer sodium salt
RL: IMF (Industrial manufacture); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(aqueous acrylic dispersion with controlled COOH distribution as primers
for concrete or mortar surfaces)
- RN 832079-39-7 HCPLUS
- CN 2-Propenoic acid, 2-methyl-, polymer with ethenylbenzene, 2-ethylhexyl
2-propenoate and methyl 2-methyl-2-propenoate, graft, sodium salt (9CI)
(CA INDEX NAME)

CM 1

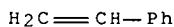
CRN 123648-94-2
CMF (C11 H20 O2 . C8 H8 . C5 H8 O2 . C4 H6 O2)x
CCI PMS

CM 2

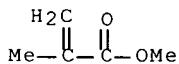
CRN 103-11-7
CMF C11 H20 O2



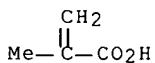
CM 3

CRN 100-42-5
CMF C8 H8

CM 4

CRN 80-62-6
CMF C5 H8 O2

CM 5

CRN 79-41-4
CMF C4 H6 O2

L47 ANSWER 5 OF 23 HCPLUS COPYRIGHT 2007 ACS on STN
 AN 2005:220183 HCPLUS Full-text
 DN 142:302176
 TI Concrete admixture additive based on salts of maleic polymers
 IN Tsai, Theresa
 PA Taiwan
 SO U.S. Pat. Appl. Publ., 11 pp.
 CODEN: USXXCO
 DT Patent
 LA English
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2005054796	A1	20050310	US 2003-655343	20030904
PRAI US 2003-655343		20030904		
OS MARPAT 142:302176				

KATHLEEN FULLER EIC1700 571-272-2505

- AB Concrete admixt. additives are derived from reacting a mixture of olefins/cyclic olefins-maleic anhydride copolymers and methoxy polyalkylene glycol amines and/or polyalkylene glycol monoalkyl ethers, or a mixture of styrene-maleic anhydride copolymers and methoxy polyalkylene glycol amines and/or polyalkylene glycol monoalkyl ethers, or a mixture of styrene-olefins/cyclic olefins-maleic anhydride terpolymers and methoxy polyalkylene glycol amines and/or polyalkylene glycol monoalkyl ethers. These reactions lead to formation of a kind of carboxylic salt containing polymer, which can be used alone in concrete. Only a small amount of this substance is needed to provide excellent water reduction, high concrete flowability and high early strength.
- IC ICM C08F234-02
- INCL 526266000
- CC 58-2 (Cement, Concrete, and Related Building Materials)
Section cross-reference(s): 35
- ST olefin maleic copolymer polyoxyalkyleneamine salt concrete additive; cycloolefin maleic copolymer polyoxyalkyleneamine salt concrete additive; styrene olefin maleic copolymer polyoxyalkyleneamine salt concrete additive; polyoxyalkylene monoether salt olefin maleic copolymer concrete additive
- IT Concrete modifiers
(concrete admixt. additive based on salts of maleic polymers)
- IT Polyoxyalkylenes, preparation
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (ethers, reaction products, with maleic copolymers, metal salts; concrete admixt. additive based on salts of maleic polymers)
- IT Butadiene rubber, preparation
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (maleated, Ricon 130MA-13, reaction products, with ethylene oxide-propylene oxide copolymer amines or monoalkyl ethers, metal salts; concrete admixt. additive based on salts of maleic polymers)
- IT 9003-17-2DP, maleated
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (butadiene rubber, Ricon 130MA-13, reaction products, with ethylene oxide-propylene oxide copolymer amines or monoalkyl ethers, metal salts; concrete admixt. additive based on salts of maleic polymers)
- IT 9011-13-6DP, SMA EF-30, reaction products with ethylene oxide-propylene oxide copolymer amines or monoalkyl ethers, metal salts 9063-06-3DP, Ethylene oxide-propylene oxide copolymer monomethyl ether, reaction products with maleic copolymers, metal salts 26678-74-0DP, Norbornene-maleic anhydride copolymer, reaction products with ethylene oxide-propylene oxide copolymer amines or monoalkyl ethers, metal salts 83713-01-3DP, Jeffamine M-2070, reaction products with maleic copolymers, metal salts 163797-99-7DP, Norbornene-maleic anhydride-styrene copolymer, reaction products with ethylene oxide-propylene oxide copolymer amines or monoalkyl ethers, metal salts
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (concrete admixt. additive based on salts of maleic polymers)
- IT 26678-74-0P, Norbornene-maleic anhydride copolymer 163797-99-7P, Norbornene-maleic anhydride-styrene copolymer
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(concrete admixt. additive based on salts of maleic polymers)
- IT 163797-99-7DP, Norbornene-maleic anhydride-styrene copolymer,

reaction products with ethylene oxide-propylene oxide copolymer amines or monoalkyl ethers, metal salts
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (concrete admixt. additive based on salts of maleic polymers)

RN 163797-99-7 HCPLUS

CN 2,5-Furandione, polymer with bicyclo[2.2.1]hept-2-ene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 498-66-8

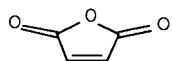
CMF C7 H10



CM 2

CRN 108-31-6

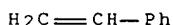
CMF C4 H2 O3



CM 3

CRN 100-42-5

CMF C8 H8



IT 163797-99-7P, Norbornene-maleic anhydride-styrene copolymer
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (concrete admixt. additive based on salts of maleic polymers)

RN 163797-99-7 HCPLUS

CN 2,5-Furandione, polymer with bicyclo[2.2.1]hept-2-ene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 498-66-8

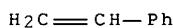
CMF C7 H10



CM 2

CRN 108-31-6
CMF C4 H2 O3

CM 3

CRN 100-42-5
CMF C8 H8

L47 ANSWER 6 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN
 AN 2004:305173 HCAPLUS Full-text
 DN 140:339817
 TI Branched olefin copolymer, process for producing the same, and use thereof
 IN Matsugi, Tomoaki; Kawahara, Nobuo; Kaneko, Hideyuki; Matsuo, Shingo;
 Kojoh, Shin-Ichi; Kashiwa, Norio
 PA Mitsui Chemicals, Inc., Japan
 SO Eur. Pat. Appl., 19 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1408058	A1	20040414	EP 2003-22980	20031010
	EP 1408058	B1	20050720		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	JP 2004131620	A	20040430	JP 2002-298420	20021011
	CN 1497001	A	20040519	CN 2003-10113885	20031008
	US 2004110903	A1	20040610	US 2003-681181	20031009
	US 7022763	B2	20060404		
	KR 2004033267	A	20040421	KR 2003-70613	20031010
PRAI	JP 2002-298420	A	20021011		
AB	Disclosed is branched olefin copolymers demonstrating excellent performance in various uses. Branched olefin copolymer comprise a building block (A) represented by formula (1) -CH ₂ CH(R ₁)- and formula (2) -CH ₂ CH[R ₂ (W _m)(FZ) _n]- wherein formula (1) R ₁ represents a hydrogen atom and a C1-18 linear or				

branched aliphatic hydrocarbon group; in the formula (2), R₂ represents a C₁-18 linear or branched aliphatic or aromatic hydrocarbon group; F represents a heteroatom or a heteroatom-containing linking group; Z represents a polymer segment containing at least one selected from an oxygen atom, a nitrogen atom, a halogen atom and an aryl group and having a mol.-weight distribution of 1.0 to 3.0; W represents a group selected from an alc. hydroxyl group, a phenolic hydroxyl group, a carboxylic acid group, a carboxylate group, an acid anhydride group, an amino group, an epoxy group, a siloxy group and a mercapto group; n is an integer of 1 to 3 and m is 0, 1 or 2 provided that when n is 2 or 3, Z may be the same or different to each other, and when m is 2, W may be the same or different to each other; and W may be bound to the same or different atom of R₁ to form a cyclic structure. A process for producing branched olefins which involves sequentially conducting (step 1) a step of synthesizing a polar group-containing olefin copolymer (Q) containing at least one functional group (G) selected from a hydroxyl group, a carboxylic acid group, an ester group, an amino group, an epoxy group, a silanol group and an acid anhydride group, (step 2) a step of converting the functional group (G) into a group having an ability to initiate radical polymerization , and (Step 3) a step of installing a polymer segment (Z) by radical polymerization of a monomer essentially comprising a carbon-carbon double bond-containing compound (R) containing at least one selected from an oxygen atom, a nitrogen atom, a halogen atom and an aryl group, is described.

- IC ICM C08F255-00
ICS C08F291-00
CC 35-3 (Chemistry of Synthetic High Polymers)
ST functional branched olefin graft copolymer
IT Polymerization catalysts
 (anionic; branched olefin copolymer, process for producing the same, and use thereof)
IT Lubricating oil additives
 (antifriction-antiwear; branched olefin copolymer, process for producing the same, and use thereof)
IT Lubricating oil additives
 (antifriction; branched olefin copolymer, process for producing the same, and use thereof)
IT Fuel tanks
 (automotive; branched olefin copolymer, process for producing the same, and use thereof)
IT Adhesives
 Concrete modifiers
 Construction materials
 Dispersing agents
 Electric insulators
 Magnetic recording materials
 Medical goods
 Plastic films
 Polymer blend compatibilizers
 (branched olefin copolymer, process for producing the same, and use thereof).
IT Automobiles
 (exterior; branched olefin copolymer, process for producing the same, and use thereof)
IT Medical goods
 (hygienic materials; branched olefin copolymer, process for producing the same, and use thereof)
IT Automobiles
 (interior parts; branched olefin copolymer, process for producing the same, and use thereof)
IT Automobiles
 (parts; branched olefin copolymer, process for producing the same, and

use thereof)

IT Polymerization catalysts
 (radical; branched olefin copolymer, process for producing the same, and use thereof)

IT 3030-47-5 7758-89-6, Copper(I) chloride
 RL: CAT (Catalyst use); USES (Uses)
 (branched olefin copolymer, process for producing the same, and use thereof)

IT 679430-65-0DP, hydrolyzed 679785-68-3P, Ethylene-10-undecen-1-ol copolymer 2-bromoisobutyrate graft copolymer with methyl methacrylate 679785-69-4P, Ethylene-10-undecen-1-ol copolymer 2-bromoisobutyrate graft copolymer with butyl acrylate and methyl acrylate 679785-70-7P, Ethylene-10-undecen-1-ol copolymer 2-bromoisobutyrate graft copolymer with styrene 679785-72-9P **679794-80-0DP**, hydrolyzed
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (branched olefin copolymer, process for producing the same, and use thereof)

IT 112155-90-5P, Ethylene-10-undecen-1-ol copolymer
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (branched olefin copolymer, process for producing the same, and use thereof)

IT 109-72-8, n-Butyllithium, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (branched olefin copolymer, process for producing the same, and use thereof)

IT **679794-80-0DP**, hydrolyzed
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (branched olefin copolymer, process for producing the same, and use thereof)

RN 679794-80-0 HCPLUS

CN 10-Undecen-1-ol, polymer with ethene and ethenylbenzene, graft, lithium salt (9CI) (CA INDEX NAME)

CM 1

CRN 679794-79-7

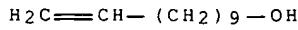
CMF (C11 H22 O . C8 H8 . C2 H4)x

CCI PMS

CM 2

CRN 112-43-6

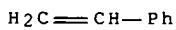
CMF C11 H22 O



CM 3

CRN 100-42-5

CMF C8 H8



CM 4

CRN 74-85-1
CMF C2 H4H2C=CH2

L47 ANSWER 7 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN
 AN 2003:240084 HCAPLUS Full-text
 DN 138:257958
 TI Heat storage material kneaded in **concrete** for floor heating
 IN Ishiguro, Mamoru
 PA Mitsubishi Paper Mills, Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 4 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003090124	A	20030328	JP 2001-282654	20010918
PRAI	JP 2001-282654		20010918		
AB	The claimed material consists of a concrete part containing a kneaded microcapsule including a heat storage material having m.p. 30-80°. The material provides high heat storage efficiency.				
IC	ICM E04F015-18				
	ICS C09K005-06; F24D011-00				
CC	52-3 (Electrochemical, Radiational, and Thermal Energy Technology) Section cross-reference(s): 58				
ST	heat storage material microcapsule concrete floor heating				
IT	Concrete Floors Heat storage Heating systems Microcapsules (encapsulated heat storage material kneaded in concrete for floor heating)				
IT	Paraffin waxes, uses RL: TEM (Technical or engineered material use); USES (Uses) (encapsulated heat storage material kneaded in concrete for floor heating)				
IT	Aminoplasts Polyureas RL: TEM (Technical or engineered material use); USES (Uses) (microcapsule; encapsulated heat storage material kneaded in concrete for floor heating)				
IT	9002-89-5, Polyvinyl alcohol 25736-61-2, Maleic anhydride-styrene copolymer sodium salt RL: TEM (Technical or engineered material use); USES (Uses) (emulsifier; encapsulated heat storage material kneaded in concrete for floor heating)				
IT	112-61-8, Methyl stearate RL: TEM (Technical or engineered material use); USES (Uses) (encapsulated heat storage material kneaded in concrete for				

floor heating)

IT 9003-08-1, Formaldehyde-melamine copolymer 86176-09-2 104559-91-3

RL: TEM (Technical or engineered material use); USES (Uses)
(microcapsule; encapsulated heat storage material kneaded in
concrete for floor heating)

IT 25736-61-2, Maleic anhydride-styrene copolymer sodium salt

RL: TEM (Technical or engineered material use); USES (Uses)
(emulsifier; encapsulated heat storage material kneaded in
concrete for floor heating)

RN 25736-61-2 HCPLUS

CN 2,5-Furandione, polymer with ethenylbenzene, sodium salt (9CI) (CA INDEX NAME)

CM 1

CRN 9011-13-6

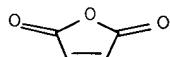
CMF (C8 H8 . C4 H2 O3)x

CCI PMS

CM 2

CRN 108-31-6

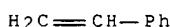
CMF C4 H2 O3



CM 3

CRN 100-42-5

CMF C8 H8



L47 ANSWER 8 OF 23 HCPLUS COPYRIGHT 2007 ACS on STN

AN 2003:56060 HCPLUS Full-text

DN 138:125969

TI Multi-functional graft copolymer-based cement dispersants improving freezing resistance and shrinkage characteristics of concrete

IN Nakanishi, Hiroshi; Ishimori, Masaki; Yaguchi, Minoru; Sugiyama, Tomomi; Kinoshita, Mitsuo; Tamaki, Shinji; Sugamata, Takumi

PA Taiheiyo Cement Kabushiki Kaisha, Japan; NMB Co., Ltd; Takemoto Yushi Kabushiki Kaisha

SO Eur. Pat. Appl., 15 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1277782	A2	20030122	EP 2002-254632	20020702
	EP 1277782	A3	20031217		

KATHLEEN FULLER EIC1700 571-272-2505

R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK			
JP 2003081670	A	20030319	JP 2002-87683	20020327
US 2003055180	A1	20030320	US 2002-180955	20020624
US 6642320	B2	20031104		
AU 776089	B2	20040826	AU 2002-48929	20020625
AU 2002048929	A5	20030109		
CA 2394113	A1	20030927	CA 2002-2394113	20020718
PRAI JP 2001-200653	A	20010702		
JP 2002-87683	A	20020327		

AB The multi-functional cement dispersant contains a graft copolymer obtainable in a first step of obtaining copolymers with number-average mol. weight 3000-50,000 by radical polymerization of a mixture of radically polymerizable monomers containing maleic anhydride and a polyoxyalkylene allyl ether in the form of $\text{CH}_2:\text{CHCH}_2\text{OAR}$ ($\text{A} = \text{polyoxyalkylene of d.p. 5-80; R = C1-18-acyl, C1-3-alkyl}$), together in an amount of 85 M % or more of this mixture and at molar ratio of from 50/50 to 80/20. A second step of preparing the graft copolymers is by a graft reaction, in the presence of a basic catalyst, of 100 weight parts of the copolymers obtained in the first step and 3-35 weight parts of one or more selected from poly(oxyalkylene) C1-6 monoalkyl ester, poly(oxyalkylene) C1-6 monoalkyl ether, and polypropylene glycol of d.p. 3-15.

Hydraulic cement compns. produced with such a multi-functional cement dispersant have a superior fluidity with reduced loss of fluidity over time and hardened objects produced from such a composition exhibit a superior early strength and have a low dry shrinkage and a high resistance against freezing and thawing. The resulting multi-functional modifiers improve early strength and freezing-thawing resistance of **concrete**, and simultaneously decrease shrinkage and setting time.

IC ICM C08G065-32

ICS C08L071-02; C04B024-32; C04B024-26

CC 58-2 (Cement, Concrete, and Related Building Materials)

Section cross-reference(s): 37, 38

ST cement dispersant **concrete** modifier graft copolymer;
polyoxyalkylene maleic anhydride graft copolymer **concrete**
modifier

IT Freezing

(-thawing resistance, polymer-modified cement; multi-functional graft copolymer-based cement dispersants improving freezing resistance and shrinkage characteristics of **concrete**)

IT Polyoxalkylenes, preparation

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(graft polymers; multi-functional graft copolymer-based cement dispersants improving freezing resistance and shrinkage characteristics of **concrete**)

IT Dispersing agents

(multi-functional graft copolymer-based cement dispersants improving freezing resistance and shrinkage characteristics of **concrete**)

IT **Concrete** modifiers

(multi-functional; multi-functional graft copolymer-based cement dispersants improving freezing resistance and shrinkage characteristics of **concrete**)

IT Compressive strength

Contraction (mechanical)

(polymer-modified cement; multi-functional graft copolymer-based cement dispersants improving freezing resistance and shrinkage characteristics of **concrete**)

IT Cement

(polymer-modified; multi-functional graft copolymer-based cement

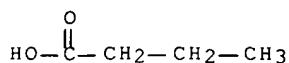
dispersants improving freezing resistance and shrinkage characteristics of **concrete**)

- IT Hardening (mechanical)
(setting, polymer-modified cement; multi-functional graft copolymer-based cement dispersants improving freezing resistance and shrinkage characteristics of **concrete**)
- IT 282535-25-5P, Ethylene oxide-propylene oxide-maleic anhydride graft copolymer butyl methyl ether 302797-79-1P, Ethylene oxide-propylene oxide-maleic anhydride graft copolymer methyl ether sodium salt
488792-28-5P, Ethylene oxide-propylene oxide-maleic anhydride graft copolymer acetate butyrate 488792-29-6P, Ethylene oxide-propylene oxide-maleic anhydride graft copolymer acetate propionate 488792-30-9P, Ethylene oxide-propylene oxide-maleic anhydride graft copolymer laurate propionate 488792-31-0P, Ethylene oxide-propylene oxide-maleic anhydride-styrene graft copolymer acetate propionate 488792-32-1P, Ethylene oxide-propylene oxide-maleic anhydride-styrene graft copolymer acetate butyrate 488792-33-2P, Ethylene oxide-propylene oxide-maleic anhydride graft copolymer butyl ether 488792-34-3P, Ethylene oxide-propylene oxide-maleic anhydride graft copolymer acetate 488792-35-4P 488792-36-5P, Ethylene oxide-propylene oxide-maleic anhydride graft copolymer acetate, ester with polypropylene glycol
488792-37-6P, Maleic anhydride-polyethylene glycol allyl ether laurate copolymer, ester with polypropylene glycol 488792-38-7P, Ethylene oxide-propylene oxide-maleic anhydride graft copolymer laurate
488792-39-8P, Maleic anhydride-polyethylene glycol allyl methyl ether copolymer, ester with polypropylene glycol 488792-40-1P, Ethylene oxide-propylene oxide-maleic anhydride graft copolymer methyl ether
488792-41-2P, Ethylene oxide-propylene oxide-maleic anhydride-styrene graft copolymer acetate butyrate sodium salt
488792-42-3P, Ethylene oxide-propylene oxide-maleic anhydride-styrene graft copolymer acetate propionate sodium salt
488792-43-4P, Ethylene oxide-propylene oxide-maleic anhydride graft copolymer acetate sodium salt 488792-44-5P, Maleic anhydride-polyethylene glycol allyl ether acetate copolymer, ester with polypropylene glycol, sodium salt 488792-45-6P, Maleic anhydride-polyethylene glycol allyl methyl ether copolymer, ester with polypropylene glycol, sodium salt
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(multi-functional graft copolymer-based cement dispersants improving freezing resistance and shrinkage characteristics of **concrete**)
)
- IT **488792-41-2P**, Ethylene oxide-propylene oxide-maleic anhydride-styrene graft copolymer acetate butyrate sodium salt
488792-42-3P, Ethylene oxide-propylene oxide-maleic anhydride-styrene graft copolymer acetate propionate sodium salt
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(multi-functional graft copolymer-based cement dispersants improving freezing resistance and shrinkage characteristics of **concrete**)
)
- RN 488792-41-2 HCPLUS
CN 2,5-Furandione, polymer with ethenylbenzene, methyloxirane and oxirane, acetate butanoate, graft, sodium salt (9CI) (CA INDEX NAME)

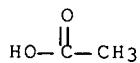
CM 1

CRN 107-92-6

CMF C4 H8 O2



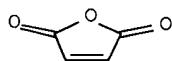
CM 2

CRN 64-19-7
CMF C2 H4 O2

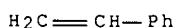
CM 3

CRN 303154-90-7
CMF (C8 H8 . C4 H2 O3 . C3 H6 O . C2 H4 O)x
CCI PMS

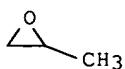
CM 4

CRN 108-31-6
CMF C4 H2 O3

CM 5

CRN 100-42-5
CMF C8 H8

CM 6

CRN 75-56-9
CMF C3 H6 O

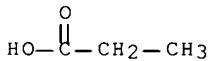
CM 7

CRN 75-21-8
CMF C2 H4 O

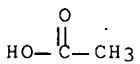
RN 488792-42-3 HCPLUS

CN 2,5-Furandione, polymer with ethenylbenzene, methyloxirane and oxirane, acetate propanoate, graft, sodium salt (9CI) (CA INDEX NAME)

CM 1

CRN 79-09-4
CMF C3 H6 O2

CM 2

CRN 64-19-7
CMF C2 H4 O2

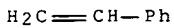
CM 3

CRN 303154-90-7
CMF (C8 H8 . C4 H2 O3 . C3 H6 O . C2 H4 O)x
CCI PMS

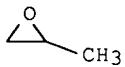
CM 4

CRN 108-31-6
CMF C4 H2 O3

CM 5

CRN 100-42-5
CMF C8 H8

CM 6

CRN 75-56-9
CMF C3 H6 O

CM 7

CRN 75-21-8
CMF C2 H4 O

L47 ANSWER 9 OF 23 HCPLUS COPYRIGHT 2007 ACS on STN
 AN 2000:210252 HCPLUS Full-text
 DN 132:251898
 TI Stabilized water-soluble polymer powders on the basis of polyoxyalkylene glycol carboxylates and their manufacture
 IN Albrecht, Gerhard; Weichmann, Josef; Wutz, Konrad; Bichler, Manfred; Kern, Alfred
 PA SKW Trostberg Aktiengesellschaft, Germany
 SO PCT Int. Appl., 28 pp.
 CODEN: PIXXD2
 DT Patent
 LA German
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000017263	A1	20000330	WO 1999-EP7103	19990923
	W: AU, CA, JP, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	DE 19843730	A1	20000330	DE 1998-19843730	19980924
	CA 2344546	A1	20000330	CA 1999-2344546	19990923
	AU 9963291	A1	20000410	AU 1999-63291	19990923
	AU 750708	B2	20020725		

EP 1124892	A1	20010822	EP 1999-950546	19990923
EP 1124892	B1	20040922		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2002526583	T	20020820	JP 2000-574169	19990923
AT 277112	T	20041015	AT 1999-950546	19990923
PT 1124892	T	20050131	PT 1999-950546	19990923
ES 2229775	T3	20050416	ES 1999-950546	19990923
US 6573316	B1	20030603	US 2000-720922	20001228
PRAI DE 1998-19843730	A	19980924		
WO 1999-EP7103	W	19990923		

AB The stabilized polymer powders, especially useful in manufacture of concrete, contain 0.01-10 weight% of a stabilizer selected from phenols, amines, phosphites, thio ethers, and thio acids, the stabilizer having been added to the aqueous polymer solution in liquid or dissolved form before conversion into a powder. Polymer powders thus protected against autoignition and oxidative degradation present unexpectedly high oxidative thermal stability even when subjected to high temps. and oxidizing influences (air, oxygen). Thus, 200 g of a 36% solution of 75:25 methacrylic acid-polyethylene glycol Me ether methacrylate copolymer was mixed with 0.36 g Additin RC 7135 (styrenated diphenylamine) and spray dried to produce a powder with average particle diameter 28 µm. This powder did not experience autoignition, whereas addition of the powdered additive to the unstabilized copolymer powder produced a product of similar particle size which did.

IC ICM C08K005-00

ICS C04B024-32

CC 37-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 58

ST stabilization water soluble copolymer powder

IT Heat stabilizers

(stabilized water-soluble powders of polyoxyalkylene glycol carboxylates)

IT Concrete

(stabilized water-soluble powders of polyoxyalkylene glycol carboxylates for use in)

IT 12738-63-5 111740-39-7, Methacrylic acid-polyethylene glycol

methyl ether methacrylate graft copolymer 167763-01-1D, Ethylene

oxide-methacrylic acid graft copolymer, Me ether 262364-23-8

262364-24-9D, Me ether 262364-25-0 262364-26-1D, Me ether

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(stabilized water-soluble powders of polyoxyalkylene glycol carboxylates)

IT 119-47-1, 2,2'-Methylenebis(6-tert-butyl-4-methylphenol)

RL: MOA (Modifier or additive use); USES (Uses)

(stabilizer, Additin RC 7115; stabilized water-soluble powders of polyoxyalkylene glycol carboxylates)

IT 96-69-5, 4,4'-Thiobis(2-tert-butyl-5-methylphenol)

RL: MOA (Modifier or additive use); USES (Uses)

(stabilizer, Lowinox 44S36; stabilized water-soluble powders of polyoxyalkylene glycol carboxylates)

IT 79-74-3, 2,5-Di-tert-amylhydroquinone

RL: MOA (Modifier or additive use); USES (Uses)

(stabilizer, Lowinox AH 25; stabilized water-soluble powders of polyoxyalkylene glycol carboxylates)

IT 92-84-2, Phenothiazine 128-37-0, Lowinox BHT, uses 693-36-7, Irganox

PS 802 6683-19-8 36339-47-6, Hostanox OSP 1 52038-44-5, Vulkanox OCD 252858-71-2, Additin RC 7135

RL: MOA (Modifier or additive use); USES (Uses)

(stabilizer; stabilized water-soluble powders of polyoxyalkylene glycol carboxylates)

IT 12738-63-5 262364-26-1D, Me ether

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (stabilized water-soluble powders of polyoxyalkylene glycol carboxylates)

RN 12738-63-5 HCAPLUS

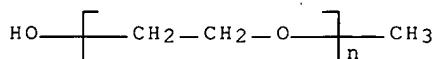
CN 2,5-Furandione, polymer with ethenylbenzene, ester with
 α -methyl- ω -hydroxypoly(oxy-1,2-ethanediyl), graft, sodium salt
 (9CI) (CA INDEX NAME)

CM 1

CRN 9004-74-4

CMF (C₂ H₄ O)_n C H₄ O

CCI PMS



CM 2

CRN 9011-13-6

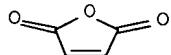
CMF (C₈ H₈ . C₄ H₂ O₃)_x

CCI PMS

CM 3

CRN 108-31-6

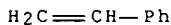
CMF C₄ H₂ O₃



CM 4

CRN 100-42-5

CMF C₈ H₈



RN 262364-26-1 HCAPLUS

CN 2,5-Furandione, polymer with ethenylbenzene and oxirane, graft, sodium salt (9CI) (CA INDEX NAME)

CM 1

CRN 109800-41-1

CMF (C₈ H₈ . C₄ H₂ O₃ . C₂ H₄ O)_x

CCI PMS

CM 2

CRN 108-31-6
CMF C4 H2 O3

CM 3

CRN 100-42-5
CMF C8 H8H₂C=CH-Ph

CM 4

CRN 75-21-8
CMF C2 H4 O

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L47 ANSWER 10 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 1999:147674 HCAPLUS Full-text

DN 130:200003

TI Cement compositions for centrifugal molding and centrifugally molded cement products

IN Takagi, Katsuhiko; Haraoka, Takashi; Takagi, Masato

PA Kawasaki Steel Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 11060311	A	19990302	JP 1997-217509	19970812
PRAI JP 1997-217509		19970812		

AB The cement compns. comprise (1) water-reducing agent and/or high-performance water-reducing agent, (2) thickening agent, (3) setting accelerator, all as admixts., (4) cement, (5) water and (6) fine aggregate and optionally coarse aggregate with (3)/(1) weight ratio 0.001-0.5, and have yield value = (0.85-1.15)x (yield value of the standard cement composition) and plastic viscosity = (1.5-5.0) x (standard cement composition) wherein the standard cement

composition contains (1) component as the admixt., cement, water, fine aggregate and optionally coarse aggregate. Optionally, the cement compns. contain a slump holding agent instead of setting accelerator (3). The cement compns. are centrifugally molded. The formation of whitewash is largely reduced without lowering the strength.

IC ICM C04B028-02
ICS B28B021-30; C04B028-02; C04B024-22; C04B024-26; C04B024-12;
C04B103-14; C04B103-32; C04B103-44

CC 58-2 (Cement, Concrete, and Related Building Materials)
ST mortar centrifugal molding; **concrete** centrifugal molding;
formate **concrete** centrifugal molding; acetate **concrete**
centrifugal molding; diethanolamine **concrete** centrifugal
molding; triethanolamine **concrete** centrifugal molding;
thiocyanate **concrete** centrifugal molding; calcium chloride
concrete centrifugal molding; potassium chloride **concrete**
centrifugal molding

IT Clays, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(centrifugal molding of mortar or **concrete** containing setting
accelerator and water-reducing agent and)

IT Thickening agents
(centrifugal molding of mortar or **concrete** containing
water-reducing agent and setting accelerator and)

IT Borates
Oligosaccharides, uses
Polyoxyalkylenes, uses
Tannins
Thiocyanates
RL: TEM (Technical or engineered material use); USES (Uses)
(centrifugal molding of mortar or **concrete** containing
water-reducing agent and thickening agent and)

IT Concrete
Mortar
(centrifugal molding of mortar or **concrete** containing
water-reducing agent and thickening agent and setting accelerator)

IT Molding
(centrifugal; centrifugal molding of mortar or **concrete**
containing water-reducing agent and thickening agent and setting
accelerator)

IT Silicates, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(fluoro-; centrifugal molding of mortar or **concrete** containing
water-reducing agent and thickening agent and)

IT Carboxylic acids, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(hydroxy, esters; centrifugal molding of mortar or **concrete**
containing water-reducing agent and thickening agent and)

IT Humic acids
RL: TEM (Technical or engineered material use); USES (Uses)
(salt; centrifugal molding of mortar or **concrete** containing
water-reducing agent and thickening agent and)

IT 9084-06-4, Naphthalenesulfonic acid-formaldehyde copolymer sodium salt
25948-25-8, Maleic acid-styrene copolymer sodium salt
.64787-97-9, Melaminesulfonic acid-formaldehyde copolymer sodium salt
RL: TEM (Technical or engineered material use); USES (Uses)
(centrifugal molding of mortar or **concrete** containing setting
accelerator and thickening agent and)

IT 471-34-1, Calcium carbonate, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(centrifugal molding of mortar or **concrete** containing setting

accelerator and water-reducing agent and)
IT 71-47-6, Formate, uses 71-50-1, uses 77-92-9D, Citric acid, salt
102-71-6, Triethanolamine, uses 111-42-2, uses 127-09-3 142-47-2,
Sodium glutamate 527-07-1, Sodium gluconate 540-72-7, Sodium
thiocyanate 608-59-3, Gluconate 7447-40-7, Potassium chloride, uses
7631-99-4, Sodium nitrate, uses 7632-00-0, Sodium nitrite 7757-79-1,
Potassium nitrate, uses 7757-82-6, Sodium sulfate, uses 7758-09-0,
Potassium nitrite 7778-18-9, Calcium sulfate 7778-80-5, Potassium
sulfate, uses 8062-15-5D, Lignosulfonate, salt 9003-01-4D, Polyacrylic
acid, salt 10043-52-4, Calcium chloride, uses 10124-37-5, Calcium
nitrate 13780-06-8, Calcium nitrite 23351-51-1D, Glucoheptonic acid,
salt . 25322-68-3

RL: TEM (Technical or engineered material use); USES (Uses)
(centrifugal molding of mortar or **concrete** containing
water-reducing agent and thickening agent and)

IT 25948-25-8, Maleic acid-styrene copolymer sodium salt

RL: TEM (Technical or engineered material use); USES (Uses)
(centrifugal molding of mortar or **concrete** containing setting
accelerator and thickening agent and)

RN 25948-25-8 HCPLUS

CN 2-Butenedioic acid (2Z)-, polymer with ethenylbenzene, sodium salt (CA
INDEX NAME)

CM 1

CRN 25300-64-5

CMF (C₈ H₈ . C₄ H₄ O₄)_x

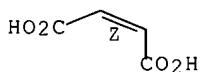
CCI PMS

CM 2

CRN 110-16-7

CMF C₄ H₄ O₄

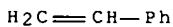
Double bond geometry as shown.



CM 3

CRN 100-42-5

CMF C₈ H₈



L47 ANSWER 11 OF 23 HCPLUS COPYRIGHT 2007 ACS on STN

AN 1998:94998 HCPLUS Full-text

DN 128:220860

TI Cement compositions generating less amount of sludge-containing water in
centrifugal casting than ordinary compositions and manufacture of
concrete forms by centrifugal casting

KATHLEEN FULLER EIC1700 571-272-2505

IN Takagi, Katsuhiko; Haraoka, Takashi; Takagi, Masato
 PA Kawasaki Steel Corp., Japan
 SO Jpn. Kokai Tokkyo Koho, 16 pp.
 CODEN: JKXXAF

DT Patent
 LA Japanese
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 10036159	A	19980210	JP 1996-196134	19960725
PRAI JP 1996-196134		19960725		

AB Cement compns. contain 100 weight parts of cement, 0.05-1 weight parts of water-reducing agents and/or high-performance water-reducing agents, (25 + 10-6)-0.25 weight parts of metal salts of α -olefin-unsatd. carboxylic acid copolymers, and (125 + 10-6)-0.25 weight parts of setting accelerators. The formed concrete show almost same slump down and strength as those of ordinary cement compns.

IC ICM C04B028-02
 ICS B28B001-20; B28B021-30; C04B028-02; C04B024-26; C04B103-14;
 C04B103-32

CC 58-2 (Cement, Concrete, and Related Building Materials)
 Section cross-reference(s): 38

ST cement centrifugal casting compn polymer additive

IT Cement (construction material)
 (cement compns. for centrifugal molding generating less amount of sludge-containing water than ordinary compns.)

IT Casting of metals
 (centrifugal; cement compns. for centrifugal molding generating less amount of sludge-containing water than ordinary compns.)

IT 79-41-4D, Methacrylic acid, polymers with α -olefins
25948-25-8, Maleic acid-styrene copolymer sodium salt
 26099-07-0, Ethylene-maleic acid copolymer sodium salt 30915-64-1,
 Isobutylene-maleic acid copolymer sodium salt 39612-00-5,
 Isobutylene-maleic anhydride copolymer sodium salt **54452-17-4**,
 Acrylic acid-styrene copolymer sodium salt 89298-81-7
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (in cement compns. for centrifugal molding generating less amount of sludge-containing water than ordinary compns.)

IT **25948-25-8**, Maleic acid-styrene copolymer sodium salt
54452-17-4, Acrylic acid-styrene copolymer sodium salt
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (in cement compns. for centrifugal molding generating less amount of sludge-containing water than ordinary compns.)

RN 25948-25-8 HCPLUS
 CN 2-Butenedioic acid (2Z)-, polymer with ethenylbenzene, sodium salt (CA INDEX NAME)

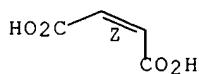
CM 1

CRN 25300-64-5
 CMF (C8 H8 . C4 H4 O4)x
 CCI PMS

CM 2

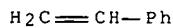
CRN 110-16-7
 CMF C4 H4 O4

Double bond geometry as shown.



CM 3

CRN 100-42-5
CMF C8 H8



RN 54452-17-4 HCPLUS

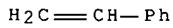
CN 2-Propenoic acid, polymer with ethenylbenzene, sodium salt (9CI) (CA INDEX NAME)

CM 1

CRN 25085-34-1
CMF (C8 H8 . C3 H4 O2)x
CCI PMS

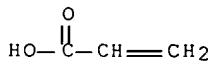
CM 2

CRN 100-42-5
CMF C8 H8



CM 3

CRN 79-10-7
CMF C3 H4 O2



L47 ANSWER 12 OF 23 HCPLUS COPYRIGHT 2007 ACS on STN

AN 1997:762336 HCPLUS Full-text

DN 128:105437

TI Concrete admixture to reduce the generation of sludge

IN Takagi, Katsuhiko; Haraoka, Takashi; Takagi, Masato

PA Kawasaki Steel Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09309755	A	19971202	JP 1996-128123	19960523
PRAI	JP 1996-128123				

AB Water reducer and/or superplasticizer 10-80, metal salt of α -olefin-unsatd. carboxylic acid copolymer 0.005-5, and setting and hardening accelerator 0.025-20 parts are dissolved or dispersed in water 100 parts to give the title article as an aqueous solution or an aqueous emulsion. Thus, a mortar prepared from cement 370, silica stone powder 90, water 147, sand 764, and crushed limestone 1079 kg/m³ with addition of 1.6 weight% (vs. cement + silica stone powder) admixt. prepared by dissolving Na salt of naphthalenesulfonic acid-formalin condensate 36.0, Na salt of isobutylene-maleic anhydride copolymer 1.0, and Ca formate 2.56 part in water 100 parts showed slump value 5.0 cm. The generation of sludge in centrifugal molding was remarkably decreased.

IC ICM C04B024-22

ICS C04B024-22; C04B024-04; C04B024-12; C04B024-18; C04B024-26; C04B103-12; C04B103-30

CC 58-2 (Cement, Concrete, and Related Building Materials)

ST admixt centrifugal molding mortar sludge

IT Concrete modifiers

Setting agents

(concrete admixt. containing water-reducing agents and olefin-carboxylic acid copolymers for sludge suppression)

IT Polyolefins

RL: MOA (Modifier or additive use); USES (Uses)

(concrete admixt. containing water-reducing agents and olefin-carboxylic acid copolymers for sludge suppression)

IT Carboxylic acids, uses

RL: MOA (Modifier or additive use); USES (Uses)

(polymers; concrete admixt. containing water-reducing agents and olefin-carboxylic acid copolymers for sludge suppression)

IT Polyoxyalkylenes, uses

RL: MOA (Modifier or additive use); USES (Uses)

(slump retainer; concrete admixt. containing water-reducing agents and olefin-carboxylic acid copolymers for sludge suppression)

IT Plasticizers

(superplasticizers; concrete admixt. containing water-reducing agents and olefin-carboxylic acid copolymers for sludge suppression)

IT Concrete modifiers

(water-reducing agents; concrete admixt. containing water-reducing agents and olefin-carboxylic acid copolymers for sludge suppression)

IT 9084-06-4

RL: MOA (Modifier or additive use); USES (Uses)

(Kflow S 110, water-reducing agent; concrete admixt. containing water-reducing agents and olefin-carboxylic acid copolymers for sludge suppression)

IT 8062-15-5D, Lignosulfonic acid, polymers with naphthalenesulfonic acids, salts

RL: MOA (Modifier or additive use); USES (Uses)

(Sanflo PSR, water reducing agent; concrete admixt. containing water-reducing agents and olefin-carboxylic acid copolymers for sludge suppression)

IT 25948-25-8, Maleic acid-styrene copolymer sodium salt

26099-07-0, Ethylene-maleic acid copolymer sodium salt 30915-64-1,

Isobutylene-maleic acid copolymer sodium salt 39612-00-5,

Isobutylene-maleic anhydride copolymer sodium salt 54452-17-4,
 Acrylic acid-styrene copolymer sodium salt 201212-77-3
 RL: MOA (Modifier or additive use); USES (Uses)
 (concrete admixt. containing water-reducing agents and
 olefin-carboxylic acid copolymers for sludge suppression)

IT 62-54-4, Calcium acetate 102-71-6, Triethanolamine, uses 141-53-7,
 Sodium formate 544-17-2, Calcium formate 7757-82-6, Sodium sulfate,
 uses 10124-37-5, Calcium nitrate
 RL: MOA (Modifier or additive use); USES (Uses)
 (setting and hardening accelerator; concrete admixt. containing
 water-reducing agents and olefin-carboxylic acid copolymers for sludge
 suppression)

IT 527-07-1, Sodium gluconate 8061-51-6, Sodium lignosulfonate 9003-04-7,
 Polyacrylic acid sodium salt 25322-68-3, Polyethylene glycol
 RL: MOA (Modifier or additive use); USES (Uses)
 (slump retainer; concrete admixt. containing water-reducing
 agents and olefin-carboxylic acid copolymers for sludge suppression)

IT 25155-19-5D, Naphthalenesulfonic acid, polymers with lignosulfonic acids,
 salts
 RL: MOA (Modifier or additive use); USES (Uses)
 (water reducing agent; concrete admixt. containing water-reducing
 agents and olefin-carboxylic acid copolymers for sludge suppression)

IT 145993-33-5, Sikament FF
 RL: MOA (Modifier or additive use); USES (Uses)
 (water-reducing agent; concrete admixt. containing water-reducing
 agents and olefin-carboxylic acid copolymers for sludge suppression)

IT 25948-25-8, Maleic acid-styrene copolymer sodium salt
 54452-17-4, Acrylic acid-styrene copolymer sodium salt
 RL: MOA (Modifier or additive use); USES (Uses)
 (concrete admixt. containing water-reducing agents and
 olefin-carboxylic acid copolymers for sludge suppression)

RN 25948-25-8 HCPLUS

CN 2-Butenedioic acid (2Z)-, polymer with ethenylbenzene, sodium salt (CA
 INDEX NAME)

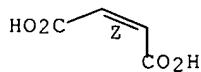
CM 1

CRN 25300-64-5
 CMF (C₈ H₈ . C₄ H₄ O₄)_x
 CCI PMS

CM 2

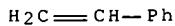
CRN 110-16-7
 CMF C₄ H₄ O₄

Double bond geometry as shown.



CM 3

CRN 100-42-5
 CMF C₈ H₈



RN 54452-17-4 HCPLUS

CN 2-Propenoic acid, polymer with ethenylbenzene, sodium salt (9CI) (CA
INDEX NAME)

CM 1

CRN 25085-34-1

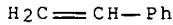
CMF (C8 H8 . C3 H4 O2)x

CCI PMS

CM 2

CRN 100-42-5

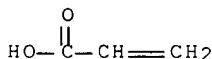
CMF C8 H8



CM 3

CRN 79-10-7

CMF C3 H4 O2



L47 ANSWER 13 OF 23 HCPLUS COPYRIGHT 2007 ACS on STN

AN 1997:623091 HCPLUS Full-text

DN 127:238112

TI Method and granular material for preparing mortar

IN Courage, Antonius Johannes Franciscus Maria; Friederichs, Joseph
PetronellaPA DSM N.V., Neth.; Courage, Antonius Johannes Franciscus Maria; Friederichs,
Joseph Petronella

SO PCT Int. Appl., 15 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9733685	A1	19970918	WO 1997-NL59	19970213
	W:	AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GE, HU, IL, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, TR, TT, UA, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR,			

IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
NL 1002344	C2	19970815	NL 1996-1002344	19960214
CA 2246454	A1	19970918	CA 1997-2246454	19970213
AU 9716763	A	19971001	AU 1997-16763	19970213
AU 709073	B2	19990819		
EP 881942	A1	19981209	EP 1997-902747	19970213
EP 881942	B1	20000419		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI				
CN 1216004	A	19990505	CN 1997-193783	19970213
CN 1106877	B	20030430		
BR 9707858	A	19990727	BR 1997-7858	19970213
EP 968762	A1	20000105	EP 1999-203387	19970213
EP 968762	B1	20031008		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI				
AT 191862	T	20000515	AT 1997-902747	19970213
ES 2146079	T3	20000716	ES 1997-902747	19970213
JP 2000512610	T	20000926	JP 1997-529639	19970213
IL 125722	A	20010614	IL 1997-125722	19970213
AT 251493	T	20031015	AT 1999-203387	19970213
US 6503319	B1	20030107	US 1998-130469	19980807
NO 9803720	A	19980813	NO 1998-3720	19980813
GR 3033931	T3	20001130	GR 2000-401616	20000711
PRAI NL 1996-1002344	A	19960214		
EP 1997-902747	A3	19970213		
WO 1997-NL59	W	19970213		

AB Method for preparing **concrete** mortar containing a fraction of inorg. grains having diameter <500 µm, which fraction is added in the form of a granular material obtained using a water-soluble polymer as binder to form the granular material. The water-soluble polymer is the Na or K salt of a maleic anhydride-styrene copolymer; and the resulting mortar is homogeneous. A maleic anhydride-styrene copolymer (styrene content 66 mol.%) was dissolved in aqueous KOH. Then, 5 kg Sand (particle size 3-100 µm) was mixed with 1 l water and 100 g of the above salt, and the mixture dried at 80°, and ground to particle size 1-3 mm. The granular material had average compressive strength 76 N, and completely disintegrated in water in 60 s.

IC ICM B01J002-28

ICS C04B018-02

CC 58-3 (Cement, Concrete, and Related Building Materials)

ST fine aggregate water sol polymer coating; styrene maleic anhydride copolymer salt coating; potassium salt copolymer coating; sodium salt copolymer coating; mortar sand fine aggregate coating

IT Aggregates

(fine, water-soluble polymer-coated; for granular material for improved homogeneity in mortar preparation)

IT Coating process

(of fine sand with water-soluble maleic anhydride-styrene copolymer potassium salt for granular material for homogeneity improvement in mortar preparation)

IT Mortar

(water-soluble polymer-coated sand as granular material for homogeneity improvement in preparation of)

IT Limestone, uses

Sand

RL: TEM (Technical or engineered material use); USES (Uses)

(water-soluble polymer-coated; for granular material for improved homogeneity in mortar preparation)

IT Polymers, uses

RL: TEM (Technical or engineered material use); USES (Uses)
 (water-soluble; improving homogeneity of mortar by using granular material
 obtained by coating fine aggregate with)

IT 25736-61-2P, Maleic anhydride-styrene copolymer sodium salt
 26602-04-0P, Maleic anhydride-styrene copolymer potassium salt
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (water-soluble; improving homogeneity of mortar by using granular material
 obtained by coating fine sand with)

IT 25736-61-2P, Maleic anhydride-styrene copolymer sodium salt
 26602-04-0P, Maleic anhydride-styrene copolymer potassium salt
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (water-soluble; improving homogeneity of mortar by using granular material
 obtained by coating fine sand with)

RN 25736-61-2 HCPLUS

CN 2,5-Furandione, polymer with ethenylbenzene, sodium salt (9CI) (CA INDEX
 NAME)

CM 1

CRN 9011-13-6

CMF (C8 H8 . C4 H2 O3)x

CCI PMS

CM 2

CRN 108-31-6

CMF C4 H2 O3



CM 3

CRN 100-42-5

CMF C8 H8



RN 26602-04-0 HCPLUS
 CN 2,5-Furandione, polymer with ethenylbenzene, potassium salt (9CI) (CA
 INDEX NAME)

CM 1

CRN 9011-13-6

CMF (C8 H8 . C4 H2 O3)x

CCI PMS

CM 2

CRN 108-31-6

CMF C4 H2 O3



CM 3

CRN 100-42-5
CMF C8 H8H2C=CH-PhL47 ANSWER 14 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1996:673651 HCAPLUS Full-text

DN 125:307338

TI Polymer **concrete** admixtures for centrifugal molding

IN Takagi, Katsuhiko; Takagi, Masato

PA Kawasaki Steel Co, Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
PI JP 08217506	A	19960827	JP 1995-27999	19950216

PRAI JP 1995-27999 19950216

AB The **concrete** admixts. are solns. containing (A) water-soluble salts of naphthalenesulfonic acid-formaldehyde condensate and (B) water-soluble salts of copolymers comprising maleic acid and/or maleic anhydride and ≥ 1 copolymerizable ethylenic unsatd. monomers, preferably selected from vinyl acetate, styrene, acrylic acid, alkyl acrylates, and C2-8 olefins. The admixts. are suitable for **concrete** piles, poles, Hume pipes, carbon steel tube linings, etc.

IC ICM C04B024-26

ICS C04B024-22

ICI C04B103-44

CC 58-2 (Cement, Concrete, and Related Building Materials)
Section cross-reference(s): 38ST naphthalenesulfonic acid formaldehyde copolymer salt **concrete**; maleic acid copolymer **concrete** admixt; centrifugal molding **concrete** admixtIT **Concrete**

(formulated admixts. for centrifugal molding)

IT 25120-73-4 **25948-25-8**, Maleic acid-styrene copolymer sodium salt 30915-64-1, Isobutylene-maleic acid copolymer sodium salt 36290-04-7, Mighty 150 56619-17-1, Diisobutylene-maleic acid copolymer sodium salt 60472-42-6, Acrylic acid-maleic acid copolymer sodium salt 89298-82-8
RL: TEM (Technical or engineered material use); USES (Uses)
(polymer **concrete** admixts. for centrifugal molding)IT **25948-25-8**, Maleic acid-styrene copolymer sodium salt

RL: TEM (Technical or engineered material use); USES (Uses)
 (polymer concrete admixts. for centrifugal molding)

RN 25948-25-8 HCAPLUS

CN 2-Butenedioic acid (2Z)-, polymer with ethenylbenzene, sodium salt (CA
 INDEX NAME)

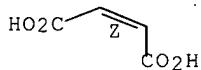
CM 1

CRN 25300-64-5
 CMF (C₈ H₈ . C₄ H₄ O₄)_x
 CCI PMS

CM 2

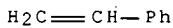
CRN 110-16-7
 CMF C₄ H₄ O₄

Double bond geometry as shown.



CM 3

CRN 100-42-5
 CMF C₈ H₈



L47 ANSWER 15 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN
 AN 1996:50884 HCAPLUS Full-text
 DN 124:153975
 TI Dispersing agents for inorganic hydraulic compositions, and the
 compositions and hardened products obtained
 IN Karasawa, Yoshimitsu; Kuroda, Yasuo
 PA Nippon Kayaku Kk, Japan
 SO Jpn. Kokai Tokkyo Koho, 7 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 07291691 JP 3315523	A B2	19951107 20020819	JP 1994-103195	19940419
PRAI	JP 1994-103195		19940419		

AB The agents contain copolymers of acrylic acid and ≥1 selected from maleic acid (anhydride) and fumaric acid, and, optionally, other monomers. The hydraulic compns. contain latent hydraulic substances, ultrafine powdered substances, setting accelerators, and the dispersing agents. The hydraulic compns. are mixed with water, molded, and cured to give the hardened products. Blast-

furnace water-granulated slags, converter slags, and fly ashes are effectively recycled.

IC ICM C04B024-26
 ICS C04B028-08; C08F220-06; C08F222-06
 ICI C04B028-08, C04B022-06, C04B024-26, C04B024-38; C04B103-40
 CC 58-6 (Cement, Concrete, and Related Building Materials)
 ST slag cement polymer dispersing agent; blast furnace slag recycling concrete; converter slag recycling concrete; fly ash recycling concrete
 IT Siliceous materials
 RL: TEM (Technical or engineered material use); USES (Uses)
 (sand; acrylic copolymer dispersing agents for inorg. hydraulic compns. for hardened products manufacture)
 IT Slags
 RL: TEM (Technical or engineered material use); USES (Uses)
 (blast-furnace, Esment; acrylic copolymer dispersing agents for inorg. hydraulic compns. for hardened products manufacture)
 IT Slags
 (converter, acrylic copolymer dispersing agents for inorg. hydraulic compns. for hardened products manufacture)
 IT Slags
 RL: TEM (Technical or engineered material use); USES (Uses)
 (ferrochromium, NJ Sand 7; acrylic copolymer dispersing agents for inorg. hydraulic compns. for hardened products manufacture)
 IT 13983-17-0, Wollastonite
 RL: TEM (Technical or engineered material use); USES (Uses)
 (acrylic copolymer dispersing agents for inorg. hydraulic compns. for hardened products manufacture)
 IT 7631-86-9, Silica, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (amorphous, fume; acrylic copolymer dispersing agents for inorg. hydraulic compns. for hardened products manufacture)
 IT 52255-49-9P, Acrylic acid-maleic anhydride copolymer sodium salt
 57816-64-5P, Acrylic acid-maleic anhydride-styrene copolymer
 sodium salt 132937-28-1P 172921-36-7P 172921-39-0P 172921-41-4P
 172921-43-6P 172921-45-8P
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (dispersant; acrylic copolymer dispersing agents for inorg. hydraulic compns. for hardened products manufacture)
 IT 497-19-8, Sodium carbonate, uses 1310-58-3, Potassium hydroxide, uses
 1310-73-2, Sodium hydroxide, uses 1344-09-8, Sodium silicate
 RL: TEM (Technical or engineered material use); USES (Uses)
 (setting accelerator; acrylic copolymer dispersing agents for inorg. hydraulic compns. for hardened products manufacture)
 IT 57816-64-5P, Acrylic acid-maleic anhydride-styrene copolymer
 sodium salt
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (dispersant; acrylic copolymer dispersing agents for inorg. hydraulic compns. for hardened products manufacture)

RN 57816-64-5 HCPLUS
 CN 2-Propenoic acid, polymer with ethenylbenzene and 2,5-furandione, sodium salt (9CI) (CA INDEX NAME)

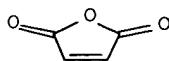
CM 1

CRN 31095-85-9

CMF (C8 H8 . C4 H2 O3 . C3 H4 O2)x

CCI PMS

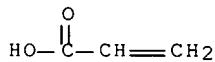
CM 2

CRN 108-31-6
CMF C4 H2 O3

CM 3

CRN 100-42-5
CMF C8 H8H₂C=CH-Ph

CM 4

CRN 79-10-7
CMF C3 H4 O2

L47 ANSWER 16 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN
 AN 1993:23392 HCAPLUS Full-text
 DN 118:23392
 TI Maleate acid ester-styrene copolymers as fluidizing agents for cement
 IN Valenti, Salvatore; Leikauf, Bernhard; Ohta, Akira
 PA Sandoz-Patent-G.m.b.H., Germany
 SO Ger. Offen., 6 pp.
 CODEN: GWXXBX

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4142388	A1	19920702	DE 1991-4142388	19911220
	DE 4142388	C2	19991209		
	CH 682237	A5	19930813	CH 1991-3759	19911218
	AT 9102515	A	19990515	AT 1991-2515	19911219
	AT 405934	B	19991227		
	NO 9105105	A	19920630	NO 1991-5105	19911227
	NO 301125	B1	19970915		
	SE 9103844	A	19920630	SE 1991-3844	19911227
	SE 506652	C2	19980126		
	FR 2671090	A1	19920703	FR 1991-16262	19911227

FR 2671090	B1	19930507		
JP 06211940	A	19940802	JP 1991-346186	. 19911227
JP 2766807	B2	19980618		
US 5612396	A	19970318	US 1995-471544	19950606
PRAI DE 1990-4042182	A1	19901229		
US 1991-814020	B1	19911226		
US 1993-108961	B2	19930818		
US 1994-272709	B1	19940708		

AB The title polymers are prepared by the reaction of maleic anhydride (I)-styrene copolymer (d.p. 10-100) with the polyoxyalkylene ethers RO(ZO)_mOH (R = alkyl, cycloalkyl, Ph; Z = C₂-6 alkylene; m = 1-100. Thus, AIBN-initiated polymerization of an adduct from 27.43 parts I and 120 parts polyethylene glycol (mol. weight 500) with 26.66 parts styrene at 100°, heating this polymer with 12.83 parts 10:90 block polyethylene-polypropylene glycol (Pluronic PE1600) at 140°, cooling, and adding aqueous NaOH gave a 40% aqueous solution of polymer ester. A mortar containing sand 1350, portland cement 450, and H₂O containing 0.3% (as solids) this solution 180 g had much better flow than with no additive or with com. sulfonate dispersants.

IC ICM C08G081-02
ICS C08G077-442; C08F222-20; C08F222-16; C08F212-08; C08F008-14;
C08F008-44; C04B040-06; C04B024-26

ICA C08F222-08; B01F017-52

ICI C04B028-04, C04B024-26

CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 46, 58

ST cement fluidizing agent polymeric; maleic anhydride copolymer ester dispersant; styrene copolymer ester dispersant; polyoxyalkylene ester copolymer dispersant; mortar dispersant polymeric

IT Concrete

Mortar
(dispersants for, maleic anhydride-styrene polymer polyoxyalkylene esters as)

IT Cement
(fluidizing agents for, maleic anhydride-styrene polymer polyoxyalkylene esters as)

IT Dispersing agents
(maleic anhydride-styrene polymer polyoxyalkylene esters, for cement compns.)

IT Polyoxalkylenes, compounds
RL: USES (Uses)
(esters, with maleic anhydride-styrene polymers, fluidizing agents for cement, manufacture of)

IT 145168-86-1P
RL: PREP (Preparation)
(fluidizing agents for cement, manufacture of)

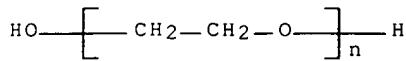
IT 145168-86-1P
RL: PREP (Preparation)
(fluidizing agents for cement, manufacture of)

RN 145168-86-1 HCPLUS

CN 2,5-Furandione, polymer with ethenylbenzene, ester with α-hydro-ω-hydroxypoly(oxy-1,2-ethanediyl) and methyloxirane block polymer with oxirane, sodium salt (9CI) (CA INDEX NAME)

CM 1

CRN 25322-68-3
CMF (C₂ H₄ O)_n H₂ O
CCI PMS

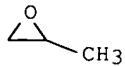


CM 2

CRN 106392-12-5
 CMF (C₃ H₆ O . C₂ H₄ O)x
 CCI PMS

CM 3

CRN 75-56-9
 CMF C₃ H₆ O



CM 4

CRN 75-21-8
 CMF C₂ H₄ O

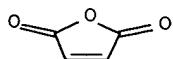


CM 5

CRN 9011-13-6
 CMF (C₈ H₈ . C₄ H₂ O₃)x
 CCI PMS

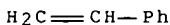
CM 6

CRN 108-31-6
 CMF C₄ H₂ O₃



CM 7

CRN 100-42-5
 CMF C₈ H₈



L47 ANSWER 17 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 1991:107905 HCAPLUS Full-text

DN 114:107905

TI Cement admixture for **concrete** with constant fluidity and strength

IN Yasumura, Jiro

PA Idemitsu Petrochemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 02225355	A	19900907	JP 1989-44802	19890225
PRAI JP 1989-44802		19890225		

AB The title admixt. contains styrene-maleic acid copolymer together with poly(styrene sulfonate) or sulfonated polymer mixture. The sulfonated polymer mixture is prepared by polymerization of a C5-10 hydrocarbon mixture from residual oils obtained by thermal decomposition of petroleum followed by sulfonation and neutralization of the polymerized product. The admixt. may also contain nonionic and/or anionic surfactants. A **concrete** composition containing the admixt. has constant fluidity for long periods, enabling stable construction work and the **concrete** has high strength after curing.

IC ICM C04B024-16

ICS C04B024-04

ICA C04B028-02

CC 58-1 (Cement, Concrete, and Related Building Materials)

ST styrene sulfonate **concrete** admixt; maleic acid styrene copolymer admixt

IT **Concrete**

(constant fluidity of, enhancement of, additives for)

IT Hydrocarbon oils

RL: SPN (Synthetic preparation); PREP (Preparation)

(in preparation of **concrete** additives)

IT 77-73-6D, polymers, sulfonated, sodium salt 95-13-6D, Indene, polymers, sulfonated, sodium salt 98-83-9D, polymers, sulfonated, sodium salt 100-42-5, uses and miscellaneous 100-80-1D, m-Vinyltoluene, polymers, sulfonated, sodium salt 300-57-2D, Allylbenzene, polymers, sulfonated, sodium salt 542-92-7D, Cyclopentadiene, polymers, sulfonated, sodium salt 766-90-5D, cis- β -Methylstyrene, polymers, sulfonated, sodium salt 873-66-5D, trans- β -Methylstyrene, polymers, sulfonated, sodium salt 9004-81-3, Poly(oxyethylene monolaurate) 9014-90-8 9080-79-9, Poly(styrene sulfonic acid sodium salt) 25948-25-8

26519-91-5D, Methylcyclopentadiene, polymers, sulfonated, sodium salt 132516-41-7

RL: USES (Uses)

(**concrete** additive, for constant fluidity of **concrete**)

)

IT 25948-25-8

RL: USES (Uses)

(**concrete** additive, for constant fluidity of **concrete**)

)
RN 25948-25-8 HCPLUS

CN 2-Butenedioic acid (2Z)-, polymer with ethenylbenzene, sodium salt (CA INDEX NAME)

CM 1

CRN 25300-64-5

CMF (C8 H8 . C4 H4 O4)x

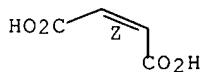
CCI PMS

CM 2

CRN 110-16-7

CMF C4 H4 O4

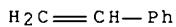
Double bond geometry as shown.



CM 3

CRN 100-42-5

CMF C8 H8



L47 ANSWER 18 OF 23 HCPLUS COPYRIGHT 2007 ACS on STN

AN 1989:120207 HCPLUS Full-text

DN 110:120207

TI Polyoxalkylene-maleic anhydride copolymer, hydrolyzate, and salt as shrinkage- and slump loss-preventing additives for concrete

IN Akimoto, Shinichi; Honda, Susumu; Yasukohchi, Tohru

PA Nippon Oils & Fats Co., Ltd., Japan

SO Eur. Pat. Appl., 9 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 291073	A2	19881117	EP 1988-107724	19880513
	EP 291073	A3	19900131		
	EP 291073	B1	19920318		
	R: DE, FR, GB				
	JP 63285140	A	19881122	JP 1987-117036	19870515
	JP 2541218	B2	19961009		
	US 4946904	A	19900807	US 1988-193699	19880513
PRAI	JP 1987-117036	A	19870515		

AB The title additive is a copolymer of a polyoxalkylene derivative of the general formula $B[O(AO)aX]_1[O(AO)bH]_m[O(AO)cR]_n$ and maleic anhydride, a

KATHLEEN FULLER EIC1700 571-272-2505

hydrolyzate of the copolymer, or a salt of the hydrolyzate, where B is a residue containing 2-8 OH groups, AO is a C2-18-, e.g. C2-4-oxyalkylene group, X is a C2-5-unsatd. hydrocarbon or acyl group, e.g. C2-5-alkenyl group, R is a C1-40-, e.g. C1-24-hydrocarbon group, a, b, and c each = 0-1000, l and n = 1-7, m = 0-2, l + m + n = 2-8, m/(l + n) = ≤ 0.5, and al + bm + cn = ≥ 1, and the polymer has number average mol. weight 1000-20,000. Thus, concrete with water/cement ratio 55.0 was prepared from cement 200, water 160, sand 758, gravel (<25 mm) 1067, Pozzolith 5L air-entraining and water-reducing agent 0.75, and the slump loss-preventing additive 3.0 kg/m², the latter being a 1:1 mol copolymer of CH₂CHCH₂(C₂H₄O)₉Me and maleic anhydride and having number average mol. weight 20,000. The properties of this concrete, compared to concrete containing Na naphthalenesulfonate-HCHO condensate as the additive (data given in parentheses) are: slump 17.7 (17.3), 17.5 (12.5), 17.3 (8.8), and 17.0 (-) in. immediately after mixing and after 30, 60, and 90 min, resp.; dry shrinkage 0.018 (0.024), 0.030 (0.046), and 0.036 (0.060)% after 7, 14, and 28 days, resp.; and compressive strength 411 (400) kg/cm³.

IC ICM C04B024-32

CC 58-2 (Cement, Concrete, and Related Building Materials)

ST shrinkage preventing additive concrete; slump loss preventing additive concrete; oxyalkylene maleic anhydride copolymer concrete

IT Concrete

(slump loss- and shrinkage-preventing additives for, polyoxyalkylene-maleic anhydride copolymers)

IT 112311-92-9 119202-07-2 119202-15-2 119202-17-4 119278-99-8
119408-81-0 119408-83-2 119408-85-4 119408-87-6
123976-89-6

RL: MOA (Modifier or additive use); USES (Uses)
(slump loss- and shrinkage-preventing additive, for concrete)

IT 119408-87-6

RL: MOA (Modifier or additive use); USES (Uses)
(slump loss- and shrinkage-preventing additive, for concrete)

RN 119408-87-6 HCPLUS

CN 2,5-Furandione, polymer with ethenylbenzene and methyloxirane polymer with oxirane ether with 2-(hydroxymethyl)-2-[(2-propenoxy)methyl]-1,3-propanediol (3:1) trimethyl ether, sodium salt (9CI) (CA INDEX NAME)

CM 1

CRN 125717-13-7

CMF (C₈ H₁₆ O₄ . C₈ H₈ . C₄ H₂ O₃ . 3 (C₃ H₆ O . C₂ H₄ O)x . 3 C H₄ O)x

CCI PMS

CM 2

CRN 108-31-6

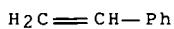
CMF C₄ H₂ O₃



CM 3

CRN 100-42-5

CMF C₈ H₈



CM 4

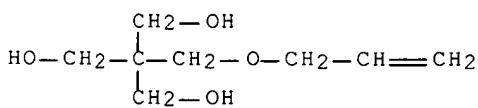
CRN 125523-78-6

CMF C8 H16 O4 . 3 (C3 H6 O . C2 H4 O)x . 3 C H4 O

CM 5

CRN 3784-12-1

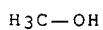
CMF C8 H16 O4



CM 6

CRN 67-56-1

CMF C H4 O



CM 7

CRN 9003-11-6

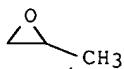
CMF (C3 H6 O . C2 H4 O)x

CCI PMS

CM 8

CRN 75-56-9

CMF C3 H6 O



CM 9

CRN 75-21-8

CMF C2 H4 O

O

L47 ANSWER 19 OF 23 HCPLUS COPYRIGHT 2007 ACS on STN
 AN 1988:80871 HCPLUS Full-text
 DN 108:80871
 TI Cement plasticizer compositions based on polymerizable carboxylic acids,
 and cementiferous compositions containing them
 IN Hoarty, John Terence; Bainbridge, Peter; Montague, Peter Graham
 PA UK
 SO Eur. Pat. Appl., 8 pp.
 CODEN: EPXXDW

DT Patent
 LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 244095	A2	19871104	EP 1987-302851	19870401
	EP 244095	A3	19890726		
	EP 244095	B1	19951018		
	R: AT, BE, CH, CA 1325863	DE, ES, FR, GB, C	GR, IT, LI, NL, SE 19940104	CA 1987-533258	19870330
	AU 8770910	A	19871008	AU 1987-70910	19870331
	AU 602682	B2	19901025		
	AT 129224	T	19951115	AT 1987-302851	19870401
	ES 2079347	T3	19960116	ES 1987-302851	19870401
	ZA 8702400	A	19881228	ZA 1987-2400	19870402
	JP 63079744	A	19880409	JP 1987-82780	19870403
	US 5047087	A	19910910	US 1989-348847	19890504

PRAI US 1986-847983 A 19860403

AB Cement plasticizers and cement compns. containing these are prepared, wherein the plasticizers are copolymers and their salts and comprise approx. 33-95 mol% of an ethylenically polymerizable carboxylic acid and 5-67 mol% of a C1-8 alkyl ester of an ethylenically polymerizable carboxylic acid or, optionally, terpolymers of 45-90 mol% of said acid, 5-50 mol% of said ester, and 5-50 mol% of a 3rd monomer preferably selected from the group comprising vinyl acetate, allyl alc., vinyl alc., and styrene. Acrylic acid is the ethylenically polymerizable carboxylic acid in 6 of 7 polymers tested, methacrylic acid is used in the 7th, and all polymers are in the form of the Na salt. The plasticizer compns. also may contain 0.1-2.0 weight% antifoaming agent and 15-35 weight% accelerator, both based on the copolymer. A plasticizer was prepared from acrylic acid 56, Me methacrylate 22, and vinyl acetate 22 mol% in the form of the Na salt and added to concrete at 0.12 weight% (based on cement) along with 0.25 weight% Bu₃PO₄ antifoaming agent. The concrete had plastic d. 2400, flow 34 and 63 before and after tamping, setting time 7.7 and 9.0 h at 500 and 1000 psi, resp., time to return to 50 mm slump 3.60 h, and 1- and 7-day compressive strength 11.0 and 36.0 N/mm² vs. 2410, 36 and 64, 7.2 and 9.4 h, 3.75 h, and 9.5 and 35.5 N/mm², resp. for concrete containing the more expensive acrylic acid-hydroxypropyl methacrylate copolymer Na salt as the plasticizer.

IC ICM C04B024-26

CC 58-1 (Cement, Concrete, and Related Building Materials)

ST polymer sodium salt cement plasticizer; methacrylic acid copolymer plasticizer; acrylic acid copolymer plasticizer; methacrylate copolymer

KATHLEEN FULLER EIC1700 571-272-2505

plasticizer; acrylate copolymer plasticizer; vinyl alc copolymer
 plasticizer; vinyl acetate copolymer plasticizer; allyl alc copolymer
 plasticizer; styrene copolymer plasticizer

IT Alcohols, uses and miscellaneous
 Siloxanes and Silicones, uses and miscellaneous
 RL: USES (Uses)
 (antifoaming agent, in cement compns. containing (meth)acrylic copolymer
 sodium salt plasticizers)

IT Antifoaming agents
 (in cement compns. containing (meth)acrylic copolymer sodium salt
 plasticizers)

IT Cement
Concrete
 (plasticizers for, (meth)acrylic copolymer sodium salts)

IT 84-74-2 126-73-8, Tributyl phosphate, uses and miscellaneous
 RL: USES (Uses)
 (antifoaming agent, in cement compns. containing (meth)acrylic copolymer
 sodium salt plasticizers)

IT 26950-79-8, Methacrylic acidmethyl methacrylate copolymer sodium salt
 51822-19-6, Acrylic acid-ethyl acrylate copolymer sodium salt 55618-96-7
 57208-39-6, Acrylic acid-methyl methacrylate copolymer sodium salt
 112665-50-6 112665-51-7 **112665-52-8**
 RL: TEM (Technical or engineered material use); USES (Uses)
 (plasticizer, for **concrete**)

IT 79-10-7D, derivs., polymers, sodium salts
 RL: TEM (Technical or engineered material use); USES (Uses)
 (plasticizers, for **concrete**)

IT 102-71-6, uses and miscellaneous 540-72-7, Sodium thiocyanate
 RL: USES (Uses)
 (setting accelerator, in cement compns. containing (meth)acrylic copolymer
 sodium salt plasticizers)

IT **112665-52-8**
 RL: TEM (Technical or engineered material use); USES (Uses)
 (plasticizer, for **concrete**)

RN 112665-52-8 HCPLUS

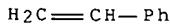
CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with ethenylbenzene and
 2-propenoic acid, sodium salt (9CI) (CA INDEX NAME)

CM 1

CRN 25767-39-9
 CMF (C₈ H₈ . C₅ H₈ O₂ . C₃ H₄ O₂)_x
 CCI PMS

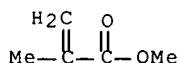
CM 2

CRN 100-42-5
 CMF C₈ H₈

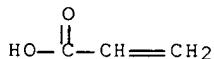


CM 3

CRN 80-62-6
 CMF C₅ H₈ O₂



CM 4

CRN 79-10-7
CMF C3 H4 O2

L47 ANSWER 20 OF 23 HCPLUS COPYRIGHT 2007 ACS on STN

AN 1988:61428 HCPLUS Full-text

DN 108:61428

TI Admixture for cement for improvement of plasticity

IN Shimada, Hidetoshi

PA Idemitsu Petrochemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
PI JP 62187151	A	19870815	JP 1986-27875	19860213
PRAI JP 1986-27875		19860213		

AB The title admixt. comprises a salt of a copolymer prepared from ≥2 components selected from isobutylene, styrene, and acrylic acid esters, and maleic acid or maleic anhydride. Thus, the copolymer prepared from isobutylene 37, styrene 16 and maleic acid 60 parts was reacted with NaOH solution to form its Na salt (I) with the number-weight mol. weight 68,000. Concrete containing the I maintained good plasticity >1 h and had improved compressive strength.

IC ICM C04B024-26

CC 58-2 (Cement, Concrete, and Related Building Materials)

ST copolymer admixture cement sodium salt; plasticizer copolymer cement

IT Plasticizers

(maleic acid copolymer sodium salts, for concrete)

IT Concrete

(plasticizer admixts. in, maleic acid copolymer sodium salts as)

IT 30915-64-1, Isobutylene-maleic acid copolymer sodium salt

112340-06-4, Isobutylene-maleic acid-styrene copolymer sodium salt

112340-08-6 112480-98-5 112481-00-2

RL: USES (Uses)

(plasticizing admixt., in concrete)

IT 112340-06-4, Isobutylene-maleic acid-styrene copolymer sodium salt

112480-98-5 112481-00-2

RL: USES (Uses)

(plasticizing admixt., in concrete)

RN 112340-06-4 HCPLUS

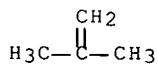
CN 2-Butenedioic acid (2Z)-, polymer with ethenylbenzene and 2-methyl-1-propene, sodium salt (9CI) (CA INDEX NAME)

CM 1

CRN 112340-05-3
 CMF (C8 H8 . C4 H8 . C4 H4 O4)x
 CCI PMS

CM 2

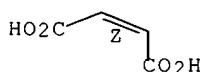
CRN 115-11-7
 CMF C4 H8



CM 3

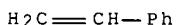
CRN 110-16-7
 CMF C4 H4 O4

Double bond geometry as shown.



CM 4

CRN 100-42-5
 CMF C8 H8.



RN 112480-98-5 HCPLUS
 CN 2-Butenedioic acid (2Z)-, polymer with ethenylbenzene and methyl 2-propenoate, sodium salt (9CI) (CA INDEX NAME)

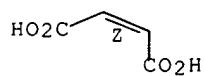
CM 1

CRN 91227-21-3
 CMF (C8 H8 . C4 H6 O2 . C4 H4 O4)x
 CCI PMS

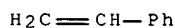
CM 2

CRN 110-16-7
 CMF C4 H4 O4

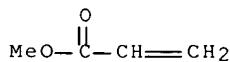
Double bond geometry as shown.



CM 3

CRN 100-42-5
CMF C8 H8

CM 4

CRN 96-33-3
CMF C4 H6 O2

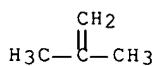
RN 112481-00-2 HCAPLUS

CN 2-Butenedioic acid (2Z)-, polymer with ethenylbenzene, 2-methyl-1-propene and methyl 2-propenoate, sodium salt (9CI) (CA INDEX NAME)

CM 1

CRN 112480-99-6
CMF (C8 H8 . C4 H8 . C4 H6 O2 . C4 H4 O4)x
CCI PMS

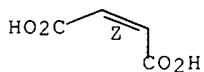
CM 2

CRN 115-11-7
CMF C4 H8

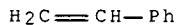
CM 3

CRN 110-16-7
CMF C4 H4 O4

Double bond geometry as shown.



CM 4

CRN 100-42-5
CMF C8 H8

CM 5

CRN 96-33-3
CMF C4 H6 O2

L47 ANSWER 21 OF 23 HCPLUS COPYRIGHT 2007 ACS on STN

AN 1986:557889 HCPLUS Full-text

DN 105:157889

TI Cement dispersants and dispersion compositions for cement with low slump loss

IN Ando, Shinya; Tanaka, Satoshi; Jo, Kyokazu

PA Sanyo Chemical Industries Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 61077652	A	19860421	JP 1984-199161	19840921
PRAI JP 1984-199161		19840921		

AB The dispersants contain a water soluble copolymer having structural units of (1) mono(meth)allyl ether of polyhydric alc. (\geq trivalent), (2) unsatd. carboxylic acid salt, and (3) unsatd. monomer if necessary. The polyhydric alc. is preferably aliphatic triol selected from glycerol, 1,2,4-butanetriol, 1,2,6-hexanetriol, trimethylethane, and trimethylolpropane, and/or the adduct of ethylene oxide and/or propylene oxide. The unsatd. carboxylic acid is preferably maleic acid and/or (meth)acrylic acid. The dispersion compns. may also consist of 5-50 parts of the water soluble copolymer, and 95-50 parts salt of formaldehyde- naphthalenesulfonic acid condensation products and/or salts of formaldehyde-melaminesulfonic acid condensation products. Cement mortar and concrete containing the dispersants are useful for placing at the construction sites and molding, and can be used with a significantly decreased amount of kneading water without decreasing the workability. Thus, an aqueous

(NH₄)₂S₂O₈ solution was added to a mixture (at 85° under N) consisting of 1-allyloxy-2,3-dihydroxypropane 132, maleic acid 116, and water 400 g with stirring, and kept at 90° for 1 h to give 748 g of an aqueous solution of 1:11-allyloxy-2,3-dihydroxypropane-maleic acid copolymer (I) (mol. weight 4000, solid component of the solution 34.8%). Concrete containing 0.1 part Na salt of I (based on the cement 100 parts) had slump 18.6 cm, setting starting and finishing time 5 min 26 s and 7 min 56 s, resp., and compressive strength 330 kg/cm² 28 days after molding, vs. 17.5 cm, 5 min 35 s and 7 min 42 s, and 285 kg/cm² for concrete similarly prepared without the cement dispersant.

- IC ICM C04B024-26
IC S C04B024-22; C04B024-30
CC 58-2 (Cement, Concrete, and Related Building Materials)
Section cross-reference(s): 38
ST dispersant cement concrete mortar; polyhydric alc allyl ether copolymer dispersant; methallyl ether polyhydric alc copolymer dispersant; carboxylic acid unsatd copolymer dispersant; allyl dihydroxypropyl ether copolymer dispersant; maleic acid copolymer cement dispersant
IT Concrete
Grout
(dispersants for, copolymers of mono(meth)allyl ether of polyhydric alc. and unsatd. carboxylic acid salts)
IT Dispersing agents
(polyhydric alc. mono(meth)allyl ether-unsatd. carboxylic acid salt copolymers, water soluble, for cement mortar and concrete, with low slump loss)
IT Alcohols, polymers
RL: USES (Uses)
(aliphatic, polyhydric, copolymers with unsatd. carboxylic acid salt and mono(meth)allyl ethers, as cement dispersants)
IT Carboxylic acids, polymers
RL: USES (Uses)
(aliphatic, unsatd., copolymers with mono(meth)allyl ethers of polyhydric alcs. dispersants, for cement mortar and concrete)
IT 56-81-5D, copolymers with unsatd. carboxylic acid salts and mono(meth)allyl ethers 77-85-0D, copolymers with unsatd. carboxylic acid salts and mono(meth)allyl ethers 77-99-6D, copolymers with unsatd. carboxylic acid salts and mono(meth)allyl ethers 106-69-4D, copolymers with unsatd. carboxylic acid salts and mono(meth)allyl ethers 3068-00-6D, copolymers with unsatd. carboxylic acid salts and mono(meth)allyl ethers
RL: USES (Uses)
(cement dispersants)
IT 108-78-1D, sulfonated, polymers with formaldehyde, sodium salts 9084-06-4
RL: USES (Uses)
(cement dispersants containing polyhydric alc. mono(meth)allyl ether-unsatd. carboxylic acid salt copolymer and, for mortar and concrete)
IT 104603-64-7 104603-73-8 104603-74-9 104603-76-1
104603-78-3
RL: USES (Uses)
(cement dispersants, for concrete and cement mortar)
IT 79-10-7D, copolymers with mono(meth)allyl ethers of polyhydric alcs.
79-41-4D, copolymers with mono(meth)allyl ethers of polyhydric alcs.
110-16-7D, copolymers with mono(meth)allyl ethers of polyhydric alcs.
RL: USES (Uses)
(dispersants, for cement mortar and concrete)
IT 104603-73-8
RL: USES (Uses)
(cement dispersants, for concrete and cement mortar)

RN 104603-73-8 HCPLUS

CN 2-Butenedioic acid (2Z)-, polymer with ethenylbenzene and
3-(2-propenyloxy)-1,2-propanediol, sodium salt (9CI) (CA INDEX NAME)

CM 1

CRN 90385-57-2

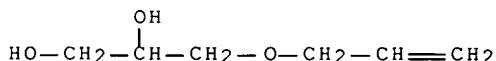
CMF (C8 H8 . C6 H12 O3 . C4 H4 O4)x

CCI PMS

CM 2

CRN 123-34-2

CMF C6 H12 O3

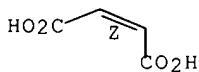


CM 3

CRN 110-16-7

CMF C4 H4 O4

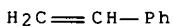
Double bond geometry as shown.



CM 4

CRN 100-42-5

CMF C8 H8



L47 ANSWER 22 OF 23 HCPLUS COPYRIGHT 2007 ACS on STN

AN 1986:411016 HCPLUS Full-text

DN 105:11016

TI Cement additive preparation

IN Koga, Yasuharu; Yamamoto, Fumitada; Shimokawa, Hideharu

PA Idemitsu Petrochemical Co., Ltd., Japan

SO Ger. Offen., 28 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

PATENT NO.

KIND DATE

APPLICATION NO.

DATE

KATHLEEN FULLER EIC1700 571-272-2505

PI	DE 3533945	A1	19860327	DE 1985-3533945
	DE 3533945	C2	19881201	19850924
	JP 61083662	A	19860428	JP 1984-200592
	JP 01059227	B	19891215	19840927
	JP 61117146	A	19860604	JP 1984-237484
	JP 01059228	B	19891215	19841113
	US 4655838	A	19870407	US 1985-769566
	GB 2164930	A	19860403	GB 1985-22272
	GB 2164930	B	19880323	19850826
PRAI	JP 1984-200592	A	19840927	19850909
	JP 1984-237484	A	19841113	

AB An additive for permanently improving the rheol. of a cement-based mixture comprises 100 weight parts saponified maleic acid-styrene copolymer or saponified maleic acid-styrene copolymer half ester and 5-900 weight parts ≥ 1 flow-improvement agent selected from a HCHO-naphthalenesulfonic acid copolymer salt, a HCHO-alkylnaphthalenesulfonic acid copolymer salt, a HCHO-alkylnaphthalenesulfonic acid-naphthalenesulfonic acid copolymer salt, a HCHO-lignosulfonic acid-naphthalenesulfonic acid copolymer salt, a lignosulfonic acid salt, a sulfonated HCHO-melamine copolymer, a saponified sulfonated maleic acid-styrene copolymer, a HCHO-sulfonated creosote oil copolymer salt, and a HCHO-sulfonated heavy aromatic hydrocarbon oil copolymer salt. Thus, 1:1 maleic acid-styrene copolymer 6.45 kg was added to an alkaline solution of NaOH 1.77 in water 12 kg and stirred at 90° for 2 h to give a clear light yellow viscous solution (I) with pH 7.22 and containing 37 weight% saponified polymer. Sep., naphthalene 500 g was sulfonated with 98% H₂SO₄ 600 g by heating together at 160° for 15 h, 37% formalin 310 g was added at 100° and the mixture held for 5 h, and the condensation product was treated by the conventional lime-soda process to give the polymer salt (II). Concrete prepared from cement 324, sand 763, small stones 1070, water 178 kg, and I and II 091 weight% each (added in aqueous solution) had air content 5.1%, set value (JIS A1128) 19.5, 18.5, 16.5, and 15.0 cm immediately, and 30, 60, and 90 min. after preparation, resp., and 7- and 28-day compressive strength (JIS A1108) 155 and 250 kg/cm², resp., vs. 3.7%, 18.5, 13.5, 8.5, and 5.5 cm, and 150 and 240 kg/cm² with 0.2 weight% II, and 4.1%, 8.0, 5.0 cm, nil, and nil, and 145 and 230 kg/cm² without either additive.

IC ICM C04B024-24
ICS C04B024-04

CC 58-1 (Cement, Concrete, and Related Building Materials)
Section cross-reference(s): 38

ST saponified copolymer additive cement rheol; copolymer salt mixt cement rheol
IT Cement

Concrete

(maleic acid-styrene copolymer salt and plasticizer admixt. for, for permanent rheol. improvement)

IT Creosote oil

RL: USES (Uses)
(sulfonated, polymer with formaldehyde, sodium salt, cement containing maleic acid-styrene copolymer salts and, for permanent rheol. improvement)

IT Hydrocarbon oils

RL: USES (Uses)
(aromatic, sulfonated, polymer with formaldehyde, sodium salt, cement containing maleic acid-styrene copolymer salts and, for permanent rheol. improvement)

IT 8061-51-6 9003-08-1D, sulfonated 9084-06-4 25300-64-5D, sulfonated, sodium salt 96477-70-2 102868-84-8 102868-86-0

RL: USES (Uses)
(cement containing maleic acid-styrene copolymer salts and, for permanent rheol. improvement)

IT 25300-64-5D, salts and semiester salts 28214-20-2
 72626-20-1 83138-38-9
 RL: USES (Uses)
 (cement containing plasticizer and, for permanent rheol. improvement)
 IT 28214-20-2 72626-20-1 83138-38-9
 RL: USES (Uses)
 (cement containing plasticizer and, for permanent rheol. improvement)
 RN 28214-20-2 HCPLUS
 CN 2-Butenedioic acid (2Z)-, polymer with ethenylbenzene, potassium salt (CA INDEX NAME)

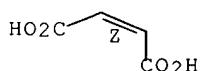
CM 1

CRN 25300-64-5
 CMF (C8 H8 . C4 H4 O4)x
 CCI PMS

CM 2

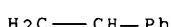
CRN 110-16-7
 CMF C4 H4 O4

Double bond geometry as shown.



CM 3

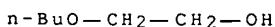
CRN 100-42-5
 CMF C8 H8



RN 72626-20-1 HCPLUS
 CN 2-Butenedioic acid (2Z)-, polymer with ethenylbenzene, 2-butoxyethyl ester, sodium salt (9CI) (CA INDEX NAME)

CM 1

CRN 111-76-2
 CMF C6 H14 O2



CM 2

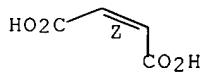
CRN 25300-64-5

CMF (C₈ H₈ . C₄ H₄ O₄)_x
 CCI PMS

CM 3

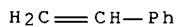
CRN 110-16-7
 CMF C₄ H₄ O₄

Double bond geometry as shown.



CM 4

CRN 100-42-5
 CMF C₈ H₈

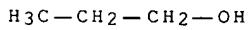


RN 83138-38-9 HCPLUS

CN 2,5-Furandione, polymer with ethenylbenzene, propyl ester, sodium salt
 (9CI) (CA INDEX NAME)

CM 1

CRN 71-23-8
 CMF C₃ H₈ O



CM 2

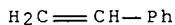
CRN 9011-13-6
 CMF (C₈ H₈ . C₄ H₂ O₃)_x
 CCI PMS

CM 3

CRN 108-31-6
 CMF C₄ H₂ O₃



CM 4

CRN 100-42-5
CMF C8 H8

L47 ANSWER 23 OF 23 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 1976:154747 HCAPLUS Full-text

DN 84:154747

TI Hydraulic mass

IN Natsuume, Tadao

PA Nippon Zeon Co., Ltd., Japan

SO Ger. Offen., 25 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2532050	A1	19760205	DE 1975-2532050	19750717
	DE 2532050	B2	19790104		
	DE 2532050	C3	19790830		
	JP 51010834	A	19760128	JP 1974-81870	19740717
	JP 51101024	A	19760907	JP 1975-26197	19750304
	JP 53038095	B	19781013		

PRAI JP 1974-81870 A 19740717
 JP 1975-26197 A 19750304

AB Concrete having improved formability and strength and requiring less water and cement than conventional compns. is obtained by adding copolymers, their esters or Na salts of maleic anhydride with pentene, hexene, cycloalkenes, or norbornene derivs. Thus, concrete containing 0.17% (2-cyano-5-norbornene)-maleic anhydride copolymer Et ester [58916-79-3] a water/cement ratio 46.7, sag 6.8 cm, and 28-day compressive strength 440 kg/cm² compared to 55, 7, and 362, resp., for a comparison sample.

IC C04B

CC 58-2 (Cement and Concrete Products)

ST maleic copolymer concrete strength; water decrease
concrete maleic copolymer

IT Concrete

(maleic anhydride copolymers in, for formability and strength and decreased water)

IT 39881-76-0 58877-65-9 58877-66-0 58877-67-1 58877-68-2
 58877-69-3 58912-68-8 58915-55-2 58915-56-3 58916-76-0
 58916-77-1 58916-78-2 58916-79-3

RL: USES (Uses)

(in concrete, for formability and strength and decreased water)

IT 58877-67-1

RL: USES (Uses)

(in concrete, for formability and strength and decreased water)

RN 58877-67-1 HCAPLUS

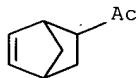
CN 2,5-Furandione, polymer with 1-bicyclo[2.2.1]hept-5-en-2-ylethanone, sodium salt (9CI) (CA INDEX NAME)

CM 1

CRN 32009-05-5
 CMF (C₉ H₁₂ O . C₄ H₂ O₃)_x
 CCI PMS

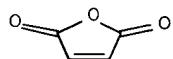
CM 2

CRN 5063-03-6
 CMF C₉ H₁₂ O

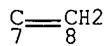
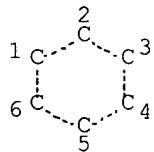


CM 3

CRN 108-31-6
 CMF C₄ H₂ O₃



=> => d que
 L3 STR

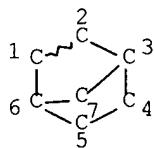


NODE ATTRIBUTES:
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RSPEC I
 NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE
 L5 SCR 2043
 L7 STR

KATHLEEN FULLER EIC1700 571-272-2505



NODE ATTRIBUTES:

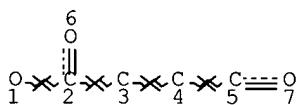
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 7

STEREO ATTRIBUTES: NONE

L8 STR



NODE ATTRIBUTES:

NSPEC IS RC AT 1
NSPEC IS RC AT 2
NSPEC IS RC AT 3
NSPEC IS RC AT 4
NSPEC IS RC AT 5

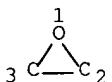
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 7

STEREO ATTRIBUTES: NONE

L10	1098 SEA FILE=REGISTRY SSS FUL L3 AND L7 AND L8 AND L5
L11	652 SEA FILE=HCAPLUS ABB=ON L10
L12	19 SEA FILE=HCAPLUS ABB=ON L11 AND CONCRETE#
L15	34493 SEA FILE=REGISTRY ABB=ON 103.10.3/RID
L19	74818 SEA FILE=REGISTRY ABB=ON 100-42-5/CRN
L23	364 SEA FILE=REGISTRY ABB=ON L15 AND L19
L24	232 SEA FILE=REGISTRY ABB=ON L15 AND (LI OR NA OR K OR RB OR CS)/ELS
L25	55 SEA FILE=REGISTRY ABB=ON L24 AND PMS/CI
L26	364 SEA FILE=REGISTRY ABB=ON L23 AND PMS/CI
L27	3499 SEA FILE=REGISTRY ABB=ON L19 AND (LI OR NA OR K OR RB OR CS)/ELS
L28	3493 SEA FILE=REGISTRY ABB=ON L27 AND PMS/CI
L32	14 SEA FILE=REGISTRY ABB=ON L10 AND (LI OR NA OR K OR RB OR CS)/ELS
L35	8 SEA FILE=HCAPLUS ABB=ON L32
L36	0 SEA FILE=HCAPLUS ABB=ON L35 AND CONCRETE#
L37	STR



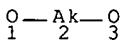
NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC I
 NUMBER OF NODES IS 3

STEREO ATTRIBUTES: NONE
 L38 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 3

STEREO ATTRIBUTES: NONE

L40 937 SEA FILE=REGISTRY SUB=L10 SSS FUL L37 OR L38
 L41 520 SEA FILE=HCAPLUS ABB=ON L40
 L42 17 SEA FILE=HCAPLUS ABB=ON L41 AND CONCRETE#
 L43 19 SEA FILE=HCAPLUS ABB=ON L36 OR L42 OR L12
 L44 3902 SEA FILE=REGISTRY ABB=ON L25 OR L26 OR L28
 L45 1306 SEA FILE=REGISTRY ABB=ON L44 NOT (N OR S OR P OR SI)/ELS
 L46 2115 SEA FILE=HCAPLUS ABB=ON L45
 L47 23 SEA FILE=HCAPLUS ABB=ON L46 AND CONCRETE#
 L49 17 SEA FILE=HCAPLUS ABB=ON (L43 OR L47) NOT L47

=> d 149 bib abs ind hitstr 1-17

L49 ANSWER 1 OF 17 HCAPLUS COPYRIGHT 2007 ACS on STN
 AN 2005:545691 HCAPLUS Full-text
 DN 143:79038
 TI Hardenable resin compositions and hardenable resin compositions for resin concrete and moldings therefrom
 IN Watanabe, Masahiko; Kurosawa, Takeshi.
 PA Hitachi Chemical Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 13 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2005162904	A	20050623	JP 2003-404811	20031203
PRAI JP 2003-404811		20031203		

AB Resin compns. contain a' parts of unsatd. polyesters prepared from unsatd. polybasic acids, polyhydric alcs., and dicyclopentadiene, b' parts of poly(vinyl alc.), and c' parts of unsatd. monomers and the compns. satisfy the relations $0.60 \leq (a' + b')/(a' + b' + c') \leq 0.90$ and $0.01 \leq b'/(a' + b' + c') \leq 0.20$. Thus, a composition contained dicyclopentadiene-diethylene glycol-maleic anhydride-styrene copolymer 95, Polyset B 870 [poly(vinyl acetate)] 5, styrene 5, and dimethylaniline 0.014 part.

IC ICM C08L067-06
ICS C08K003-00; C08K005-00; C08L031-04

CC 37-6 (Plastics Manufacture and Processing)

ST dicyclopentadiene unsatd polyester polyvinyl acetate shrinkproof agent

IT Aggregates
Fillers
(hardenable unsatd. polyester resin compns. for resin **concrete** and moldings)

IT Carboxylic acids, preparation
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polycarboxylic, unsatd., polyesters; hardenable unsatd. polyester resin compns. for resin **concrete** and moldings)

IT Alcohols, preparation
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyhydric, polyesters; hardenable unsatd. polyester resin compns. for resin **concrete** and moldings)

IT Contraction (mechanical)
(thermal; hardenable unsatd. polyester resin compns. for resin **concrete** and moldings)

IT 9003-20-7, Poly(vinyl acetate)
RL: MOA (Modifier or additive use); USES (Uses)
(Polyset B 870; hardenable unsatd. polyester resin compns. for resin **concrete** and moldings)

IT 97667-15-7P, Dicyclopentadiene-diethylene glycol-maleic anhydride-propylene glycol-styrene copolymer 201417-33-6P,
Dicyclopentadiene-diethylene glycol-maleic anhydride-styrene copolymer
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(hardenable unsatd. polyester resin compns. for resin **concrete** and moldings)

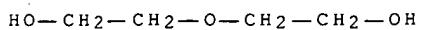
IT 97667-15-7P, Dicyclopentadiene-diethylene glycol-maleic anhydride-propylene glycol-styrene copolymer 201417-33-6P,
Dicyclopentadiene-diethylene glycol-maleic anhydride-styrene copolymer
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(hardenable unsatd. polyester resin compns. for resin **concrete** and moldings)

RN 97667-15-7 HCPLUS

CN 2,5-Furandione, polymer with ethenylbenzene, 2,2'-oxybis[ethanol], 1,2-propanediol and 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene (9CI) (CA INDEX NAME)

CM 1

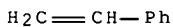
CRN 111-46-6
CMF C4 H10 O3



CM 2

CRN 108-31-6
CMF C4 H2 O3

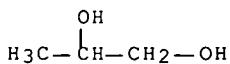
CM 3

CRN 100-42-5
CMF C8 H8

CM 4

CRN 77-73-6
CMF C10 H12

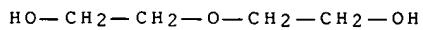
CM 5

CRN 57-55-6
CMF C3 H8 O2

RN 201417-33-6 HCPLUS
 CN 2,5-Furandione, polymer with ethenylbenzene, 2,2'-oxybis[ethanol] and
 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene (9CI) (CA INDEX NAME)

CM 1

CRN 111-46-6
 CMF C4 H10 O3



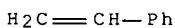
CM 2

CRN 108-31-6
 CMF C4 H2 O3



CM 3

CRN 100-42-5
 CMF C8 H8



CM 4

CRN 77-73-6
 CMF C10 H12



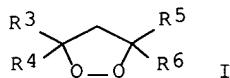
L49 ANSWER 2 OF 17 HCAPLUS COPYRIGHT 2007 ACS on STN
 AN 2005:522235 HCAPLUS Full-text
 DN 143:44765
 TI Cast articles with low formaldehyde release and resin compositions
 therefor
 IN Fujita, Yukiko; Urao, Chieko; Futami, Yohei; Kunishima, Kazuhiko
 PA Dainippon Ink and Chemicals, Inc., Japan
 SO Jpn. Kokai Tokkyo Koho, 17 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 2005154588
 PRAI JP 2003-395455
 OS MARPAT 143:44765
 GI

A 20050616 JP 2003-395455
 20031126

20031126



- AB The compns., useful for washbowls, resin **concretes**, etc., comprise (A) resins having ethylenically unsatd. double bonds, (B) monomers having the double bonds, (C) compds. having hydrazo groups, urea linkages, and/or urethane linkages, R₁COCH₂COR₂ [R₁, R₂ = alkyl(oxy), alkenyl, alkynyl, OH, amino, carbonyl], and/or I [R₃-R₆ = H, alkyl(oxy), alkenyl, alkynyl, OH, amino, carbonyl], and (D) fillers. Thus, maleic anhydride-phthalic anhydride-propylene glycol-toluhydroquinone copolymer was mixed with styrene, Al(OH)₃ (326S), and ethyleneurea, poured into precoated FRP article, and thermally cured to give a washstand counter with no cracks and low HCHO release.
- IC ICM C08L101-02
 ICS B29C039-00; C08K005-07; C08K005-1565; C08K005-16; C08F290-00;
 B29K067-00
- CC 38-3 (Plastics Fabrication and Uses)
- ST cast article low formaldehyde release; unsatd polyester styrene washstand counter low formaldehyde; ethyleneurea acetoacetoxyethyl methacrylate incorporated polyester formaldehyde release prevention
- IT Polyesters, uses
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (acrylic; resin compns. for cast articles with low formaldehyde release)
- IT Polyethers, uses
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (polyester-, unsatd., polymers with styrene and dicyclopentadiene; resin compns. for cast articles with low formaldehyde release)
- IT Polyesters, uses
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (polyether-, unsatd., polymers with styrene and dicyclopentadiene; resin compns. for cast articles with low formaldehyde release)
- IT Polymer **concrete**
 (resin compns. for cast articles with low formaldehyde release)
- IT Polyesters, uses
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (unsatd., polymers with styrene; resin compns. for cast articles with low formaldehyde release)
- IT Household furnishings
 (washstand counters; resin compns. for cast articles with low formaldehyde release)
- IT 120-93-4, Ethyleneurea
 RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES (Uses)
 (curing catalysts; resin compns. for cast articles with low formaldehyde release)
- IT 21645-51-2, CWL 326S, uses

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (fillers; resin compns. for cast articles with low formaldehyde release)

IT 853560-56-2P 853560-57-3P **853560-58-4P**

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (resin compns. for cast articles with low formaldehyde release)

IT 50-00-0, Formaldehyde, miscellaneous

RL: MSC (Miscellaneous)

(resin compns. for cast articles with low formaldehyde release)

IT **853560-58-4P**

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (resin compns. for cast articles with low formaldehyde release)

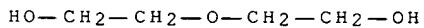
RN 853560-58-4 HCPLUS

CN 2,5-Furandione, polymer with 4-(1,1-dimethylethyl)-1,2-benzenediol, ethenylbenzene, 2-methyl-1,4-benzenediol, 2,2'-oxybis[ethanol] and 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene (9CI) (CA INDEX NAME)

CM 1

CRN 111-46-6

CMF C4 H10 O3



CM 2

CRN 108-31-6

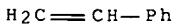
CMF C4 H2 O3



CM 3

CRN 100-42-5

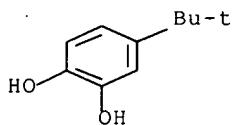
CMF C8 H8



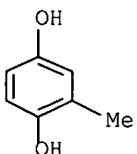
CM 4

CRN 98-29-3

CMF C10 H14 O2



CM 5

CRN 95-71-6
CMF C7 H8 O2

CM 6

CRN 77-73-6
CMF C10 H12

L49 ANSWER 3 OF 17 HCPLUS COPYRIGHT 2007 ACS on STN

AN 2005:322985 HCPLUS Full-text

DN 142:374644

TI Vinyl esters, their resins, curable compositions containing them with low odor and good curability, their application method, structures using them

IN Kuroki, Kazuhiro; Miura, Kenji; Kobayashi, Masayuki; Otani, Kazuo

PA Showa Highpolymer Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 21 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 2005097523	A	20050414	JP 2004-82907	20040322
PRAI JP 2003-304598	A	20030828		

AB The vinyl esters, useful for poured floors, road coatings (on asphalt or concretes), etc., are manufactured by reacting epoxy resins with saturated monobasic acids, saturated polybasic acids, and unsatd. monobasic acids. Thus, bisphenol A-epichlorohydrin copolymer (Araldite AER 2603) was reacted with acetic acid, a dimer acid (Haridimer 270S), and methacrylic acid, mixed with dicyclopentenyl methacrylate (QM 57T), a paraffin wax, and catalysts, cast in

a glass mold, and cured to give a test board showing tensile strength 17.5 MPa, tensile modulus 0.9 GPa, and elongation 42%.

IC ICM C08G059-14
ICS C08F290-06; E01C003-06; E01C007-35; E01C011-24; E04F015-12

CC 37-3 (Plastics Manufacture and Processing)
Section cross-reference(s): 42, 58

ST vinyl ester resin odorless floor coating; epoxy acrylate asphalt
concrete road coating

IT Epoxy resins, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(acrylates; vinyl ester resins with low odor and good curability for floors and roads)

IT Epoxy resins, preparation
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(acrylic; vinyl ester resins with low odor and good curability for floors and roads)

IT **Concrete**
(coatings on; vinyl ester resins with low odor and good curability for floors and roads)

IT Asphalt
RL: MSC (Miscellaneous)
(coatings on; vinyl ester resins with low odor and good curability for floors and roads)

IT Fatty acids, preparation
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dimer acids; esters with vinyl ester resins, polymers; vinyl ester resins with low odor and good curability for floors and roads)

IT Floors
Roads
(vinyl ester resins with low odor and good curability for floors and roads)

IT Fibers
Paraffin waxes, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(vinyl ester resins with low odor and good curability for floors and roads)

IT Coating materials
(water-resistant; vinyl ester resins with low odor and good curability for floors and roads)

IT 6700-85-2 94700-32-0
RL: CAT (Catalyst use); USES (Uses)
(vinyl ester resins with low odor and good curability for floors and roads)

IT 849333-14-8P 849333-16-0P 849333-24-0P **849333-27-3P**
849333-28-4P
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(vinyl ester resins with low odor and good curability for floors and roads)

IT 849333-13-7P 849333-15-9P 849333-23-9P 849333-26-2P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(vinyl ester resins with low odor and good curability for floors and roads)

IT **849333-27-3P** **849333-28-4P**
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM

(Technical or engineered material use); PREP (Preparation); USES (Uses)
 (vinyl ester resins with low odor and good curability for floors and
 roads)

RN 849333-27-3 HCAPLUS

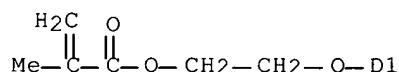
CN 2-Propenoic acid, 2-methyl-, 2-[[3a,4,5,6,7,7a-hexahydro-4,7-methano-1H-inden-5(or 6)-yl]oxy]ethyl ester, polymer with (chloromethyl)oxirane polymer with formaldehyde acetate 2-methyl-2-propenoate ester with Haridimer 270S, and ethenylbenzene polymer with methyl 2-methyl-2-propenoate and oxiranylmethyl 2-methyl-2-propenoate 2-(2-propenyl)ethyl (2Z)-2-butenedioate (9CI) (CA INDEX NAME)

CM 1

CRN 68169-03-9

CMF C16 H22 O3

CCI IDS



CM 2

CRN 849333-26-2

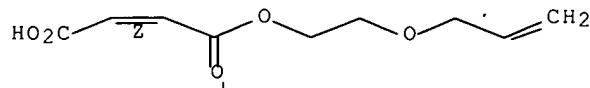
CMF C9 H12 O5 . x (C8 H8 . C7 H10 O3 . C5 H8 O2)x

CM 3

CRN 849333-25-1

CMF C9 H12 O5

Double bond geometry as shown:



CM 4

CRN 29564-58-7

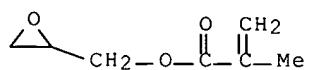
CMF (C8 H8 . C7 H10 O3 . C5 H8 O2)x

CCI PMS

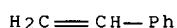
CM 5

CRN 106-91-2

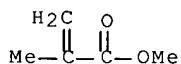
CMF C7 H10 O3



CM 6

CRN 100-42-5
CMF C8 H8

CM 7

CRN 80-62-6
CMF C5 H8 O2

CM 8

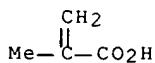
CRN 849333-13-7
CMF C4 H6 O2 . x (C3 H5 Cl O . C H2 O)x . x C2 H4 O2 . x Unspecified

CM 9

CRN 173329-43-6
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

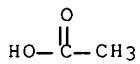
CM 10

CRN 79-41-4
CMF C4 H6 O2

CM 11

CRN 64-19-7

CMF C2 H4 O2

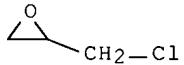


CM 12

CRN 34822-23-6
 CMF (C3 H5 Cl O . C H2 O)x
 CCI PMS

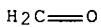
CM 13

CRN 106-89-8
 CMF C3 H5 Cl O



CM 14

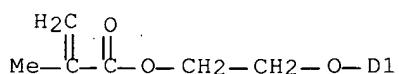
CRN 50-00-0
 CMF C H2 O



RN 849333-28-4 HCPLUS
 CN 2-Propenoic acid, 2-methyl-, 2-[[3a,4,5,6,7,7a-hexahydro-4,7-methano-1H-inden-5(or 6)-yl]oxy]ethyl ester, polymer with (chloromethyl)oxirane polymer with formaldehyde 2-methyl-2-propenoate octanoate ester with Haridimer 270S, and ethenylbenzene polymer with methyl 2-methyl-2-propenoate and oxiranylmethyl 2-methyl-2-propenoate 2-(2-propenyl)ethyl (2Z)-2-butenedioate (9CI) (CA INDEX NAME)

CM 1

CRN 68169-03-9
 CMF C16 H22 O3
 CCI IDS



CM 2

CRN 849333-26-2

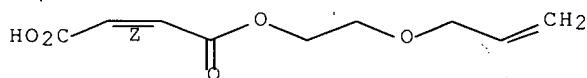
CMF C9 H12 O5 . x (C8 H8 . C7 H10 O3 . C5 H8 O2)x

CM 3

CRN 849333-25-1

CMF C9 H12 O5

Double bond geometry as shown.



CM 4

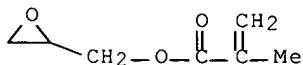
CRN 29564-58-7

CMF (C8 H8 . C7 H10 O3 . C5 H8 O2)x
CCI PMS

CM 5

CRN 106-91-2

CMF C7 H10 O3



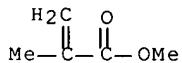
CM 6

CRN 100-42-5

CMF C8 H8

 $\text{H}_2\text{C}=\text{CH}-\text{Ph}$

CM 7

CRN 80-62-6
CMF C5 H8 O2

CM 8

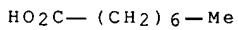
CRN 849333-15-9
CMF C8 H16 O2 . x C4 H6 O2 . x (C3 H5 Cl O . C H2 O)x . x Unspecified

CM 9

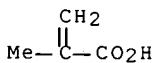
CRN 173329-43-6
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 10

CRN 124-07-2
CMF C8 H16 O2

CM 11

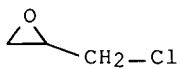
CRN 79-41-4
CMF C4 H6 O2

CM 12

CRN 34822-23-6
CMF (C3 H5 Cl O . C H2 O)x
CCI PMS

CM 13

CRN 106-89-8
CMF C3 H5 Cl O



CM 14

CRN 50-00-0
CMF C H₂ OH₂C=OL49 ANSWER 4 OF 17 HCPLUS COPYRIGHT 2007 ACS on STN
AN 2005:94045 HCPLUS Full-text

DN 142:157396

TI Low profile agent-free unsaturated polyester compositions for polymer **concretes** and their moldings with high mechanical strength and little shrinkage

IN Yokota, Koichi; Ubutame, Yutaka

PA Hitachi Chemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2005029640	A	20050203	JP 2003-194263	20030709
PRAI JP 2003-194263		20030709		

AB The compns. comprise mixts. of crosslinkable monomers and unsatd. polyesters comprising unsatd. dibasic acids, saturated dibasic acids, dialkylene glycols and/or alkylene glycols, mixts. of crosslinkable monomers and unsatd. polyesters containing dicyclo maleate (I), glass balloons, aggregate, and fillers. Thus, a composition comprising a mixture of styrene and diethylene glycol-maleic anhydride-phthalic anhydride-propylene glycol polyester, a mixture of styrene and I-diethylene glycol-propylene glycol polyester, glass balloons (Cel-Star Z 27), silica sand, and CaCO₃ (NS 100) was cured to give test pieces showing bending strength (JIS A 1184) 20.1 MPa, shrinkage rate 0.311%, and no crack.

IC ICM C08L067-06

ICS C04B014-24; C04B026-18; C08K003-00; C08K005-00; C08K007-28

CC 38-3 (Plastics Fabrication and Uses)

ST crack prevention polyester crosslinker styrene molding; decreased shrinkage polymer **concrete** unsatd polyester; silica sand phthalate dicyclo maleate polyester; calcium carbonate glass balloon unsatd polyester

IT Sand

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(aggregate; unsatd. polyester compns. with high mech. strength and decreased shrinkage for polymer **concretes**)

IT Glass microspheres

KATHLEEN FULLER EIC1700 571-272-2505

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (borosilicate, Cel-Star Z 27; unsatd. polyester compns. with high mech. strength and decreased shrinkage for polymer **concretes**)

IT Borosilicate glasses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (microspheres, Cel-Star Z 27; unsatd. polyester compns. with high mech. strength and decreased shrinkage for polymer **concretes**)

IT Polymer **concrete**
 (unsatd. polyester compns. with high mech. strength and decreased shrinkage for polymer **concretes**)

IT Molded plastics, uses
 Polymer blends
 RL: TEM (Technical or engineered material use); USES (Uses)
 (unsatd. polyester compns. with high mech. strength and decreased shrinkage for polymer **concretes**)

IT Polyesters, uses
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
 (unsatd.; unsatd. polyester compns. with high mech. strength and decreased shrinkage for polymer **concretes**)

IT 471-34-1, Calcium carbonate, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (NS 100, R Jutan, filler; unsatd. polyester compns. with high mech. strength and decreased shrinkage for polymer **concretes**)

IT 26098-37-3P, Diethylene glycol-maleic anhydride-phthalic anhydride-propylene glycol copolymer 68928-71-2P, Dicyclopentadiene-diethylene glycol-maleic anhydride-propylene glycol copolymer
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
 (unsatd. polyester compns. with high mech. strength and decreased shrinkage for polymer **concretes**)

IT 189631-74-1P, Dicyclopentadiene-diethylene glycol-maleic anhydride-phthalic anhydride-propylene glycol-styrene copolymer 831227-03-3P, Dicyclopentadiene-diethylene glycol-hexamethylenediisocyanate-maleic anhydride-phthalic anhydride-propylene glycol-styrene copolymer
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (unsatd. polyester compns. with high mech. strength and decreased shrinkage for polymer **concretes**)

IT 189631-74-1P, Dicyclopentadiene-diethylene glycol-maleic anhydride-phthalic anhydride-propylene glycol-styrene copolymer 831227-03-3P, Dicyclopentadiene-diethylene glycol-hexamethylenediisocyanate-maleic anhydride-phthalic anhydride-propylene glycol-styrene copolymer
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (unsatd. polyester compns. with high mech. strength and decreased shrinkage for polymer **concretes**)

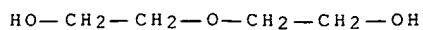
RN 189631-74-1 HCPLUS

CN 1,3-Isobenzofurandione, polymer with ethenylbenzene, 2,5-furandione, 2,2'-oxybis[ethanol], 1,2-propanediol and 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene (9CI) (CA INDEX NAME)

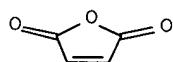
CM 1

CRN 111-46-6

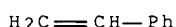
CMF C4 H10 O3



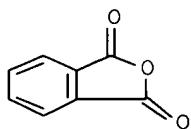
CM 2

CRN 108-31-6
CMF C4 H2 O3

CM 3

CRN 100-42-5
CMF C8 H8

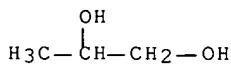
CM 4

CRN 85-44-9
CMF C8 H4 O3

CM 5

CRN 77-73-6
CMF C10 H12

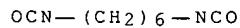
CM 6

CRN 57-55-6
CMF C3 H8 O2

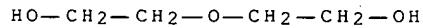
RN 831227-03-3 HCPLUS

CN 1,3-Isobenzofurandione, polymer with 1,6-diisocyanatohexane,
ethenylbenzene, 2,5-furandione, 2,2'-oxybis[ethanol], 1,2-propanediol and
3a,4,7,7a-tetrahydro-4,7-methano-1H-indene (9CI) (CA INDEX NAME)

CM 1

CRN 822-06-0
CMF C8 H12 N2 O2

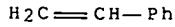
CM 2

CRN 111-46-6
CMF C4 H10 O3

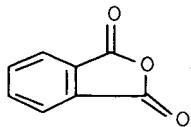
CM 3

CRN 108-31-6
CMF C4 H2 O3

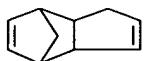
CM 4

CRN 100-42-5
CMF C8 H8

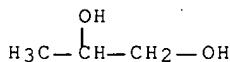
CM 5

CRN 85-44-9
CMF C8 H4 O3

CM 6

CRN 77-73-6
CMF C10 H12

CM 7

CRN 57-55-6
CMF C3 H8 O2

L49 ANSWER 5 OF 17 HCPLUS COPYRIGHT 2007 ACS on STN
 AN 2004:986224 HCPLUS Full-text
 DN 141:396628
 TI Unsaturated polyesters, their resin **concrete** compositions, and
 their crack-free moldings with suppressed shrinkage on curing and good
 dimensional precision
 IN Utsumi, Makoto; Mukuno, Hidekazu; Uda, Hiroshi
 PA Showa Highpolymer Co., Ltd., Japan
 SO Jpn. Kokai Tokyo Koho, 9 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004323696 JP 3682970	A B2	20041118 20050817	JP 2003-120969	20030425

PRAI JP 2003-120969

20030425

AB The compns. contain (A) unsatd. polyesters composed of (A1) unsatd. polyesters obtained from dicyclopentadiene (I), unsatd. polybasic carboxylic acids and optionally saturated polybasic carboxylic acids, glycerin (II), and ≥ 1 polyalkylene glycols selected from polyethylene glycol (III), polypropylene glycol, and polybutylene glycol with Mn ≥ 200 , and (A2) polymerizable unsatd. monomers, (B) aggregates, and (C) fillers. Thus, a resin **concrete** compound composed of 104 parts an unsatd. polyester composition comprising 669:451:85:368 (reaction ratio) I-maleic anhydride-II-III copolymer, styrene 599, hydroquinone 0.2, and Co naphthenate 6 g, 1.04 parts 55% MEK peroxide, 160 parts CoCO₃, and 536 parts sand was poured in molds under vibration, cured at ambient temperature, and left for 14 days to give test pieces having high strength, excellent dimensional stability, and crack resistance.

IC ICM C08F283-01

CC 38-3 (Plastics Fabrication and Uses)

ST unsatd polyester resin **concrete** crack free; dicyclopentadiene unsatd polyester resin **concrete**; maleic anhydride unsatd polyester resin **concrete**; glycerin unsatd polyester resin **concrete**; polyalkylene glycol unsatd polyester resin **concrete**

IT Polyoxyphenylenes

RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyester-, unsatd.; unsatd. polyesters for crack- and shrinkage-free resin **concrete** compns. with good dimensional precision)

IT Polyesters, uses

RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyoxyphénylene-, unsatd.; unsatd. polyesters for crack- and shrinkage-free resin **concrete** compns. with good dimensional precision)

IT Polymer **concrete**

(unsatd. polyesters for crack- and shrinkage-free resin **concrete** compns. with good dimensional precision)

IT 790257-36-2P, Dicyclopentadiene-glycerin-maleic anhydride-polyethylene glycol-styrene copolymer 790257-37-3P, Dicyclopentadiene-glycerin-maleic anhydride-phthalic anhydride-polyethylene glycol-styrene copolymer

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(crosslinked; unsatd. polyesters for crack- and shrinkage-free resin **concrete** compns. with good dimensional precision)

IT 471-34-1, Calcium carbonate, uses

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(filler; unsatd. polyesters for crack- and shrinkage-free resin **concrete** compns. with good dimensional precision)

IT 790257-36-2P, Dicyclopentadiene-glycerin-maleic anhydride-polyethylene glycol-styrene copolymer 790257-37-3P, Dicyclopentadiene-glycerin-maleic anhydride-phthalic anhydride-polyethylene glycol-styrene copolymer

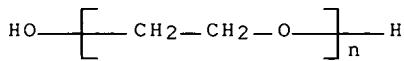
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(crosslinked; unsatd. polyesters for crack- and shrinkage-free resin **concrete** compns. with good dimensional precision)

RN 790257-36-2 HCAPLUS

CN 2,5-Furandione, polymer with ethenylbenzene, α -hydro- ω -hydroxypoly(oxy-1,2-ethanediyl), 1,2,3-propanetriol and 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene (9CI) (CA INDEX NAME)

CM 1

CRN 25322-68-3
 CMF (C₂ H₄ O)_n H₂ O
 CCI PMS



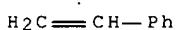
CM 2

CRN 108-31-6
 CMF C₄ H₂ O₃



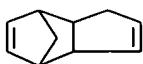
CM 3

CRN 100-42-5
 CMF C₈ H₈



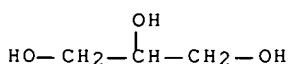
CM 4

CRN 77-73-6
 CMF C₁₀ H₁₂



CM 5

CRN 56-81-5
 CMF C₃ H₈ O₃



RN 790257-37-3 HCPLUS

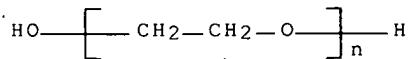
CN 1,3-Isobenzofurandione, polymer with ethenylbenzene, 2,5-furandione,
α-hydro-ω-hydroxypoly(oxy-1,2-ethanediyl), 1,2,3-propanetriol
and 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene (9CI) (CA INDEX NAME)

CM 1

CRN 25322-68-3

CMF (C₂ H₄ O)_n H₂O

CCI PMS



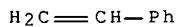
CM 2

CRN 108-31-6

CMF C₄ H₂ O₃

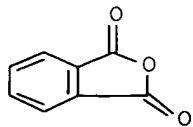
CM 3

CRN 100-42-5

CMF C₈ H₈

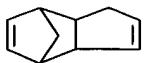
CM 4

CRN 85-44-9

CMF C₈ H₄ O₃

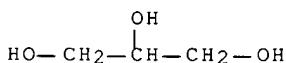
CM 5

CRN 77-73-6
 CMF C10 H12



CM 6

CRN 56-81-5
 CMF C3 H8 O3



L49 ANSWER 6 OF 17 HCPLUS COPYRIGHT 2007 ACS on STN
 AN 2003:550231 HCPLUS Full-text
 DN 139:118322
 TI Unsaturated polyesters, their manufacture, unsaturated polyester resins, their use for FRP waterproofing materials, resin mortar linings, resin concrete compositions, and resin concretes, and their application method
 IN Imai, Tsuneo; Yanai, Takayuki; Kikuchi, Eichi; Kubo, Tetsuya
 PA Showa Highpolymer Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 29 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003201340 JP 3535863	A B2	20030718 20040607	JP 2002-142864	20020517
PRAI	JP 2001-205160 JP 2001-205161 JP 2001-339222	A A A	20010705 20010705 20011105		

AB The unsatd. polyesters have end groups containing ≥ 2 residues selected from acid imide alc. residues, alkyl alc. residues having ≥ 1 Ph group, dicyclopentadiene residues, and oligocyclopentadiene residues. Unsatd. polyester resins comprising 100 parts of the unsatd. polyesters and 5-55 parts radically polymerizable monomers are useful for FRP (fiber-reinforced plastic) waterproofing materials, resin mortar linings, and resin concretes. Thus, dicyclopentadiene was esterified with maleic anhydride, and the resulting dicyclopentadiene maleate or fumarate was subjected to esterification reaction with benzyl alc., maleic anhydride, and propylene glycol to give an unsatd. polyester (Mn 680, Mw 1410), 7000 parts of which was mixed with 1.0 part hydroquinone and 3000 parts styrene to give an unsatd. polyester resin having viscosity (at 25°) 150 mPa-s and volatiles content 29.2%. A composition containing the resin, SiO₂, Co naphthenate, dimethylaniline, tert-

- butylcatechol, and MEK peroxide gave a cured product showing good flexibility and boiling resistance.
- IC ICM C08G063-676
ICS C08F283-01; C08J005-04; C08K003-00; C08K005-14; C08K007-02;
C08L055-00
- CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 37, 58
- ST unsatd polyester FRP waterproofing resin **concrete**; mortar lining
unsatd polyester dicyclopentadiene maleate; benzyl alc dicyclopentadiene
maleate unsatd polyester
- IT Chemically resistant materials
(alkali-resistant; manufacture of unsatd. polyesters having end groups and
their compns. with low volatile monomer content for FRP waterproofing
materials, resin mortar linings, and resin **concretes**)
- IT Reinforced plastics
RL: TEM (Technical or engineered material use); USES (Uses)
(glass fiber-reinforced; manufacture of unsatd. polyesters having end
groups
and their compns. with low volatile monomer content for FRP
waterproofing materials, resin mortar linings, and resin
concretes)
- IT Water-resistant materials
(heat-resistant; manufacture of unsatd. polyesters having end groups and
their compns. with low volatile monomer content for FRP waterproofing
materials, resin mortar linings, and resin **concretes**)
- IT Acid-resistant materials
Linings (nonrefractory)
Polymer concrete,
(manufacture of unsatd. polyesters having end groups and their compns. with
low volatile monomer content for FRP waterproofing materials, resin
mortar linings, and resin **concretes**)
- IT Glass roving
RL: MOA (Modifier or additive use); TEM (Technical or engineered material
use); USES (Uses)
(manufacture of unsatd. polyesters having end groups and their compns. with
low volatile monomer content for FRP waterproofing materials, resin
mortar linings, and resin **concretes**)
- IT Glass fibers, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material
use); USES (Uses)
(mats, ECM 450-198Y-CT-N/C, MC 450N; manufacture of unsatd. polyesters
having end groups and their compns. with low volatile monomer content
for FRP waterproofing materials, resin mortar linings, and resin
concretes)
- IT Polyoxalkylenes, uses
RL: IMF (Industrial manufacture); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(polyester-, unsatd.; manufacture of unsatd. polyesters having end groups
and their compns. with low volatile monomer content for FRP
waterproofing materials, resin mortar linings, and resin
concretes)
- IT Polyesters, uses
RL: IMF (Industrial manufacture); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(polyoxalkylene-, unsatd.; manufacture of unsatd. polyesters having end
groups and their compns. with low volatile monomer content for FRP
waterproofing materials, resin mortar linings, and resin
concretes)
- IT Polyesters, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM

- (Technical or engineered material use); PREP (Preparation); USES (Uses) (unsatd.; manufacture of unsatd. polyesters having end groups and their compns. with low volatile monomer content for FRP waterproofing materials, resin mortar linings, and resin **concretes**)
- IT Heat-resistant materials
 (water-resistant; manufacture of unsatd. polyesters having end groups and their compns. with low volatile monomer content for FRP waterproofing materials, resin mortar linings, and resin **concretes**)
- IT 100-42-5DP, Styrene, polymers with dihydrotricyclopentadienyl mono(maleate or fumarate) and benzyl alc.-modified maleic anhydride-propylene glycol copolymer 9016-84-6DP, Maleic anhydride-propylene glycol copolymer, esters, polymers with styrene 25749-49-9DP, Maleic anhydride-propylene glycol copolymer, esters, polymers with styrene 26779-34-0DP, Tricyclopentadiene, mono(maleate or fumarate) derivs., esters with maleic anhydride-propylene glycol copolymer and benzyl alc., polymer with styrene 561298-34-8P, Maleic anhydride-propylene glycol copolymer ester with dihydrodicyclopentadienyl mono(maleate or fumarate) and benzyl alcohol, polymer with styrene 561298-36-0P, Maleic anhydride-neopentyl glycol-propoxylated bisphenol A copolymer ester with dihydrodicyclopentadienyl mono(maleate or fumarate) and benzyl alcohol, polymer with styrene 561298-38-2P, Isophthalic acid-maleic anhydride-polypropylene glycol copolymer ester with dihydrodicyclopentadienyl mono(maleate or fumarate) and benzyl alcohol, polymer with styrene 561298-40-6P, Maleic anhydride-phthalic anhydride-propylene glycol copolymer ester with benzyl alcohol and 2-tetrahydrophthalimidoethanol, polymer with styrene 561298-42-8P, Maleic anhydride-propoxylated bisphenol A copolymer ester with benzyl alcohol and 2-tetrahydrophthalimidoethanol, polymer with styrene 561298-44-0P, Maleic anhydride-propoxylated bisphenol A copolymer ester with benzyl alcohol and 2-hexahydrophthalimidoethanol, polymer with styrene 561298-46-2P, Maleic anhydride-propoxylated bisphenol A copolymer ester with dihydrodicyclopentadienyl monomaleate and 2-tetrahydrophthalimidoethanol, polymer with styrene 561298-48-4P, Maleic anhydride-propylene glycol copolymer ester with dihydrodicyclopentadienyl monomaleate and 2-tetrahydrophthalimidoethanol, polymer with styrene 561298-50-8P, Maleic anhydride-propoxylated bisphenol A copolymer ester with dihydrodicyclopentadienyl monomaleate and 2-hexahydrophthalimidoethanol, polymer with styrene
- RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (manufacture of unsatd. polyesters having end groups and their compns. with low volatile monomer content for FRP waterproofing materials, resin mortar linings, and resin **concretes**)
- IT 77-73-6, Dicyclopentadiene 108-31-6, Maleic anhydride, reactions 26779-34-0, Tricyclopentadiene
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (manufacture of unsatd. polyesters having end groups and their compns. with low volatile monomer content for FRP waterproofing materials, resin mortar linings, and resin **concretes**)
- IT 561298-34-8P, Maleic anhydride-propylene glycol copolymer ester with dihydrodicyclopentadienyl mono(maleate or fumarate) and benzyl alcohol, polymer with styrene 561298-36-0P, Maleic anhydride-neopentyl glycol-propoxylated bisphenol A copolymer ester with dihydrodicyclopentadienyl mono(maleate or fumarate) and benzyl alcohol, polymer with styrene 561298-38-2P, Isophthalic acid-maleic anhydride-polypropylene glycol copolymer ester with dihydrodicyclopentadienyl mono(maleate or fumarate) and benzyl alcohol, polymer with styrene 561298-46-2P, Maleic anhydride-propoxylated bisphenol A copolymer ester with dihydrodicyclopentadienyl monomaleate and 2-tetrahydrophthalimidoethanol, polymer with styrene 561298-48-4P***,

Maleic anhydride-propylene glycol copolymer ester with dihydropyclopentadienyl monomaleate and 2-tetrahydrophthalimidoethanol, polymer with styrene 561298-50-8P, Maleic anhydride-propoxylated bisphenol A copolymer ester with dihydropyclopentadienyl monomaleate and 2-hexahydrophthalimidoethanol, polymer with styrene
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (manufacture of unsatd. polyesters having end groups and their compns. with low volatile monomer content for FRP waterproofing materials, resin mortar linings, and resin concretes)

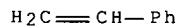
RN 561298-34-8 HCPLUS

CN 2,5-Furandione, polymer with 1,2-propanediol, 3a,4,5,6,7,7a-hexahydro-4,7-methano-1H-inden-5(or 6)-yl 2-butenedioate, phenylmethyl ester, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 100-42-5

CMF C8 H8



CM 2

CRN 561298-33-7

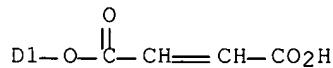
CMF C14 H16 O4 . x C7 H8 O . x (C4 H2 O3 . C3 H8 O2)x

CM 3

CRN 74033-90-2

CMF C14 H16 O4

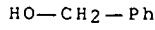
CCI IDS



CM 4

CRN 100-51-6

CMF C7 H8 O



CM 5

CRN 25749-49-9
 CMF (C₄ H₂ O₃ . C₃ H₈ O₂)_x
 CCI PMS

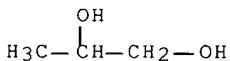
CM 6

CRN 108-31-6
 CMF C₄ H₂ O₃



CM 7

CRN 57-55-6
 CMF C₃ H₈ O₂

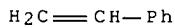


RN 561298-36-0 HCAPLUS

CN 2,5-Furandione, polymer with 2,2-dimethyl-1,3-propanediol and α,α' -[(1-methylethylidene)di-4,1-phenylene]bis[ω -hydroxypoly[oxy(methyl-1,2-ethanediyl)]], 3a,4,5,6,7,7a-hexahydro-4,7-methano-1H-inden-5(or 6)-yl 2-butenedioate, phenylmethyl ester, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 100-42-5
 CMF C₈ H₈

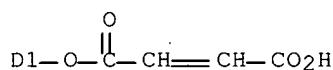


CM 2

CRN 561298-35-9
 CMF C₁₄ H₁₆ O₄ . x C₇ H₈ O . x (C₅ H₁₂ O₂ . C₄ H₂ O₃ . (C₃ H₆ O)_n (C₃ H₆ O)_n C₁₅ H₁₆ O₂)_x

CM 3

CRN 74033-90-2
 CMF C₁₄ H₁₆ O₄
 CCI IDS



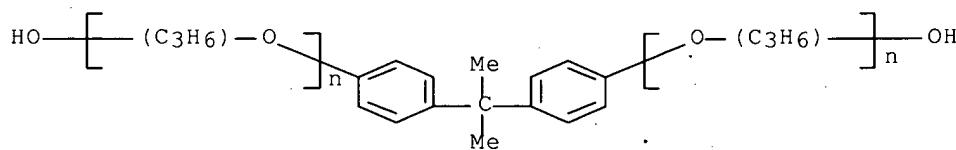
CM 4

CRN 100-51-6
CMF C7 H8 O $\text{HO}-\text{CH}_2-\text{Ph}$

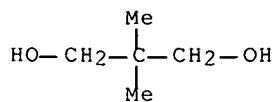
CM 5

CRN 97701-00-3
CMF (C5 H12 O2) . C4 H2 O3 . (C3 H6 O)n (C3 H6 O)n C15 H16 O2)x
CCI PMS

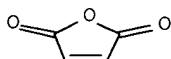
CM 6

CRN 37353-75-6
CMF (C3 H6 O)n (C3 H6 O)n C15 H16 O2
CCI IDS, PMS

CM 7

CRN 126-30-7
CMF C5 H12 O2

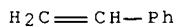
CM 8

CRN 108-31-6
CMF C4 H2 O3

RN 561298-38-2 HCPLUS

CN 1,3-Benzenedicarboxylic acid, polymer with 2,5-furandione and
 α -hydro- ω -hydroxypoly[oxy(methyl-1,2-ethanediyl)],
3a,4,5,6,7,7a-hexahydro-4,7-methano-1H-inden-5(or 6)-yl 2-butenedioate,
phenylmethyl ester, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

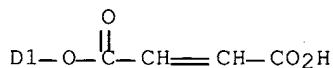
CM 1

CRN 100-42-5
CMF C8 H8

CM 2

CRN 561298-37-1
CMF C14 H16 O4 . x (C8 H6 O4 . C4 H2 O3 . (C3 H6 O)n H2 O)x . x C7 H8 O

CM 3

CRN 74033-90-2
CMF C14 H16 O4
CCI IDS

CM 4

CRN 100-51-6
CMF C7 H8 O



CM 5

CRN 58593-15-0

CMF (C₈ H₆ O₄) . C₄ H₂ O₃ . (C₃ H₆ O)_n H₂ O)x

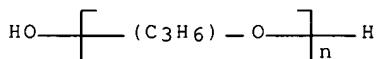
CCI PMS

CM 6

CRN 25322-69-4

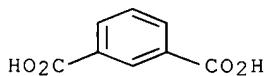
CMF (C₃ H₆ O)_n H₂ O

CCI IDS, PMS



CM 7

CRN 121-91-5

CMF C₈ H₆ O₄

CM 8

CRN 108-31-6

CMF C₄ H₂ O₃

RN 561298-46-2 HCPLUS

CN 2,5-Furandione, polymer with $\alpha,\alpha'-(1\text{-methylallylidene})\text{di-4,1-phenylene]bis}[\omega\text{-hydroxypoly[oxy(methyl-1,2-ethanediyl)}]]$,
 3a,4,5,6,7,7a-hexahydro-4,7-methano-1H-inden-5(or 6)-yl
 (2Z)-2-butenedioate, 2-(1,3,3a,4,7,7a-hexahydro-1,3-dioxo-2H-isoindol-2-yl)ethyl ester, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 100-42-5

CMF C₈ H₈

$$\text{H}_2\text{C} \equiv \text{CH}-\text{Ph}$$

CM 2

CRN 561298-45-1

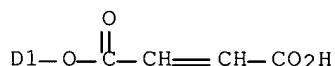
CMF C14 H16 O4 . x C10 H13 N O3 . x (C4 H2 O3 . (C3 H6 O)n (C3 H6 O)n C15
H16 O2)x

CM 3

CRN 28347-17-3

CMF C14 H16 Q4

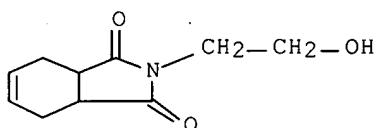
CCI IDS



CM 4

CRN 15458-48-7

CME C10 H13 N 03



CM 5

CRN 51259-75-7

CMF (C₄ H₂ O₃ . (C₃ H₆ O)_n (C₃ H₆ O)_n C₁₅ H₁₆ O₂)_x

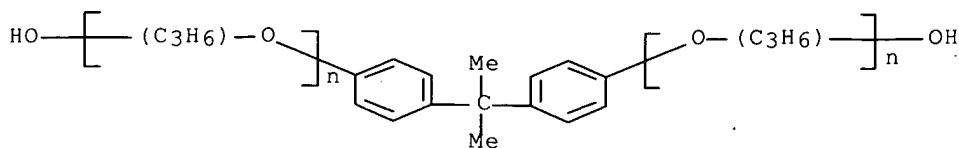
CGI PMS

CM 6

CRN 37353-75-6

CMF (C₃ H₆ O)_n (C₃ H₆ O)_n C₁₅ H₁₆ O₂

GCI TDS PMS



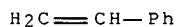
CM 7

CRN 108-31-6
CMF C4 H2 O3

RN 561298-48-4 HCAPLUS

CN 2,5-Furandione, polymer with 1,2-propanediol, 3a,4,5,6,7,7a-hexahydro-4,7-methano-1H-inden-5(or 6)-yl (2Z)-2-butenedioate, 2-(1,3,3a,4,7,7a-hexahydro-1,3-dioxo-2H-isoindol-2-yl)ethyl ester, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

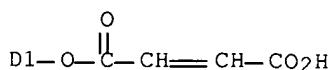
CM 1

CRN 100-42-5
CMF C8 H8

CM 2

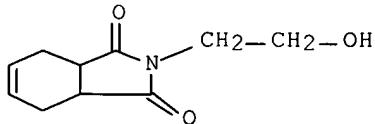
CRN 561298-47-3
CMF C14 H16 O4 . x C10 H13 N O3 . x (C4 H2 O3 . C3 H8 O2)x

CM 3

CRN 28347-17-3
CMF C14 H16 O4
CCI IDS

CM 4

CRN 15458-48-7
 CMF C10 H13 N O3

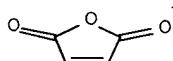


CM 5

CRN 25749-49-9
 CMF (C₄ H₂ O₃ . C₃ H₈ O₂)_x
 CCI PMS

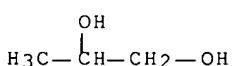
CM 6

CRN 108-31-6
 CMF C₄ H₂ O₃



CM 7

CRN 57-55-6
 CMF C₃ H₈ O₂

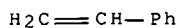


RN 561298-50-8 HCPLUS

CN 2,5-Furandione, polymer with α,α' -[(1-methylethylidene)di-4,1-phenylene]bis[ω -hydroxypoly[oxy(methyl-1,2-ethanediyl)]], 3a,4,5,6,7,7a-hexahydro-4,7-methano-1H-inden-5(or 6)-yl (2Z)-2-butenedioate, 2-(octahydro-1,3-dioxo-2H-isoindol-2-yl)ethyl ester, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 100-42-5
 CMF C₈ H₈



CM 2

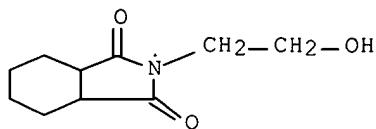
CRN 561298-49-5

CMF C14 H16 O4 . x C10 H15 N O3 . x (C4 H2 O3 . (C3 H6 O)n (C3 H6 O)n C15 H16 O2)x

CM 3

CRN 115610-20-3

CMF C10 H15 N O3

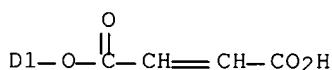
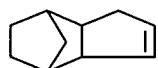


CM 4

CRN 28347-17-3

CMF C14 H16 O4

CCI IDS



CM 5

CRN 51259-75-7

CMF (C4 H2 O3 . (C3 H6 O)n (C3 H6 O)n C15 H16 O2)x

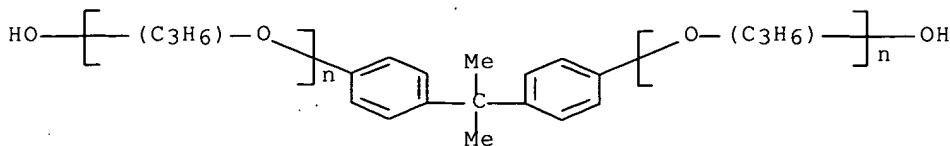
CCI PMS

CM 6

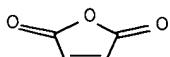
CRN 37353-75-6

CMF (C3 H6 O)n (C3 H6 O)n C15 H16 O2

CCI IDS, PMS



CM 7

CRN 108-31-6
CMF C4 H2 O3

L49 ANSWER 7 OF 17 HCPLUS COPYRIGHT 2007 ACS on STN

AN 2002:244702 HCPLUS Full-text

DN 136:280444

TI Waterproofing lining material

IN Otsuki, Nobuaki; Kajino, Masahiko

PA Nippon Shokubai Kagaku Kogyo Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002097290	A	20020402	JP 2000-285993	20000920
	JP 2005097613	A	20050414	JP 2004-270200	20040916

PRAI JP 2000-285993 A3 20000920

AB A waterproofing lining material for surfaces, such as concrete surface and mortar surface, comprises a radical-curable resin composition and a reinforcing material, such as a glass mat. The radical-curable resin is characterized by having a styrene content of 1-9 weight% and a volatile substance content of 10-50 g/m² at 25° after curing.

IC ICM C08J005-24

ICS C08F283-01; C08F290-06; C09K003-18; E04D005-06

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 37, 58

ST waterproofing lining styrene contg polymer

IT Epoxy resins, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(acrylates, polymers; waterproofing lining material for concrete and mortar surfaces)

IT Polyesters, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(acrylic, graft; waterproofing lining material for concrete and mortar surfaces)

IT Polyesters, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(acrylic; waterproofing lining material for concrete and mortar surfaces)

IT Glass fibers, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(mats; waterproofing lining material for concrete and mortar
surfaces)

IT Water-resistant materials

(waterproofing lining material for concrete and mortar
surfaces)

IT 406487-50-1 406487-51-2 406487-52-3 406487-54-5

406487-55-6 406487-56-7 406487-57-8 406487-58-9

406487-59-0 406487-60-3 406487-61-4 406487-62-5

RL: TEM (Technical or engineered material use); USES (Uses)
(waterproofing lining material for concrete and mortar
surfaces)

IT 406487-54-5 406487-58-9

RL: TEM (Technical or engineered material use); USES (Uses)
(waterproofing lining material for concrete and mortar
surfaces)

RN 406487-54-5 HCAPLUS

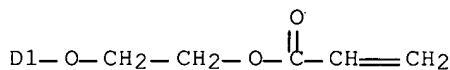
CN 1,3-Benzene dicarboxylic acid, polymer with 2,2'-[1,2-
ethanediyl bis(oxy)]bis[ethanol], ethenylbenzene, 2,5-furandione,
2-[(3a,4,5,6,7,7a-hexahydro-4,7-methano-1H-inden-5(or 6)-yl)oxy]ethyl
2-propenoate, hexanedioic acid and 1,2-propanediol (9CI) (CA INDEX NAME)

CM 1

CRN 68169-12-0

CMF C15 H20 O3

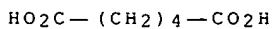
CCI IDS



CM 2

CRN 124-04-9

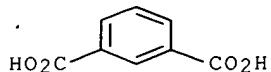
CMF C6 H10 O4



CM 3

CRN 121-91-5

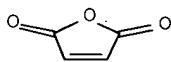
CMF C8 H6 O4



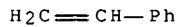
CM 4

CRN 112-27-6
CMF C6 H14 O4

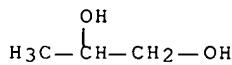
CM 5

CRN 108-31-6
CMF C4 H2 O3

CM 6

CRN 100-42-5
CMF C8 H8

CM 7

CRN 57-55-6
CMF C3 H8 O2

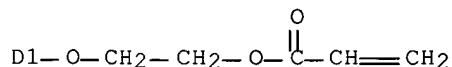
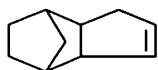
RN 406487-58-9 HCPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with ethenylbenzene, 2,5-furandione, 2-[[3a,4,5,6,7,7a-hexahydro-4,7-methano-1H-inden-5(or 6)-yl]oxy]ethyl 2-propenoate, hexanedioic acid, 1,3-isobenzofurandione, 2,2'-oxybis[ethanol] and 1,2-propanediol (9CI) (CA INDEX NAME)

CM 1

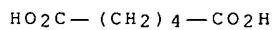
KATHLEEN FULLER EIC1700 571-272-2505

CRN 68169-12-0
 CMF C15 H20 O3
 CCI IDS



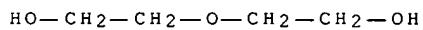
CM 2

CRN 124-04-9
 CMF C6 H10 O4



CM 3

CRN 111-46-6
 CMF C4 H10 O3



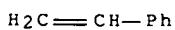
CM 4

CRN 108-31-6
 CMF C4 H2 O3

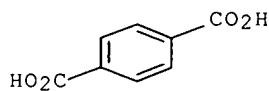


CM 5

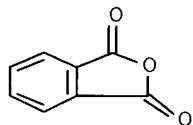
CRN 100-42-5
 CMF C8 H8



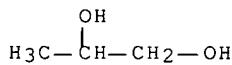
CM 6

CRN 100-21-0
CMF C8 H6 O4

CM 7

CRN 85-44-9
CMF C8 H4 O3

CM 8

CRN 57-55-6
CMF C3 H8 O2

L49 ANSWER 8 OF 17 HCPLUS COPYRIGHT 2007 ACS on STN
 AN 2002:148823 HCPLUS Full-text
 DN 136:201262
 TI Thermosetting resin waterproofing compositions with excellent adhesion to topcoats, waterproof structures coated with them, and coating method
 IN Yamazaki, Isahide; Kajino, Masahiko
 PA Nippon Shokubai Kagaku Kogyo Co., Ltd., Japan; Japan Composite Co., Ltd.
 SO Jpn. Kokai Tokyo Koho, 9 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002060607 JP 3639778	A B2	20020226 20050420	JP 2000-247552	20000817

PRAI JP 2000-247552

20000817

AB The compns., useful for roofs, roads, and parkings, etc., contain thermosetting resins (A) containing unsatd. polyesters (having $\geq 10\%$ dicyclopentenyl group) and polymerizable monomers and fiber reinforcements (B), wherein cured products of A have tensile strength ≥ 10 MPa and elongation $\geq 20\%$. Thus, a concrete plate was primed with NS-YP (polyurethane), coated with a composition containing 65 parts unsatd. polyester (prepared from dicyclopentadiene-maleic acid adduct, phthalic anhydride, and diethylene glycol), 35 parts styrene, and .apprx.23% glass mats, cured, and further coated with a 100:1 Epolac N 325 (unsatd. polyester)-Kayamek M (curing agent) mixture to give a test piece showing good interlayer adhesion and no tack of the cured composition layer.

IC ICM C08L067-06

ICS C08F283-01; C08K007-02; E04D007-00

CC 38-2 (Plastics Fabrication and Uses)

Section cross-reference(s): 37, 42, 58

ST thermosetting resin waterproof layer tack free; dicyclopentadiene unsatd polyester curing adhesion topcoat; fiber reinforced plastic waterproofing concrete road

IT Reinforced plastics

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(glass fiber-reinforced, waterproof structures having tack-free fiber-reinforced plastic layers containing dicyclopentenyl-containing unsatd. polyesters with good adhesion to topcoats)

IT Glass fibers, uses

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(mats, reinforcements; waterproof structures having tack-free fiber-reinforced plastic layers containing dicyclopentenyl-containing unsatd.

polyesters with good adhesion to topcoats)

IT Concrete

(substrate; waterproof structures having tack-free fiber-reinforced plastic layers containing dicyclopentenyl-containing unsatd. polyesters with

good adhesion to topcoats)

IT Plastics, uses

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(thermosetting, waterproofing layer; waterproof structures having tack-free fiber-reinforced plastic layers containing dicyclopentenyl-containing unsatd. polyesters with good adhesion to topcoats)

IT Polyesters, uses

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(unsatd., waterproofing layer; waterproof structures having tack-free fiber-reinforced plastic layers containing dicyclopentenyl-containing unsatd.

polyesters with good adhesion to topcoats)

IT Water-resistant materials

(waterproof structures having tack-free fiber-reinforced plastic layers containing dicyclopentenyl-containing unsatd. polyesters with good adhesion to topcoats)

IT 395058-83-0, NS-YP

RL: TEM (Technical or engineered material use); USES (Uses)
 (primer layer; waterproof structures having tack-free fiber-reinforced
 plastic layers containing dicyclopentenyl-containing unsatd. polyesters
 with

good adhesion to topcoats)

IT 136108-72-0, Epolac N 325

RL: TEM (Technical or engineered material use); USES (Uses)
 (topcoat; waterproof structures having tack-free fiber-reinforced
 plastic layers containing dicyclopentenyl-containing unsatd. polyesters
 with

good adhesion to topcoats)

IT 401458-93-3P, Dicyclopentadiene-diethylene glycol-maleic
 anhydride-phthalic anhydride-styrene copolymer 401458-94-4P,
 Adipic acid-dicyclopentadiene-diethylene glycol-maleic anhydride-phthalic
 anhydride-styrene copolymer

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); PREP
 (Preparation); USES (Uses)

(waterproofing layer; waterproof structures having tack-free
 fiber-reinforced plastic layers containing dicyclopentenyl-containing
 unsatd.

polyesters with good adhesion to topcoats)

IT 401458-93-3P, Dicyclopentadiene-diethylene glycol-maleic
 anhydride-phthalic anhydride-styrene copolymer 401458-94-4P,
 Adipic acid-dicyclopentadiene-diethylene glycol-maleic anhydride-phthalic
 anhydride-styrene copolymer

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP
 (Properties); TEM (Technical or engineered material use); PREP
 (Preparation); USES (Uses)

(waterproofing layer; waterproof structures having tack-free
 fiber-reinforced plastic layers containing dicyclopentenyl-containing
 unsatd.

polyesters with good adhesion to topcoats)

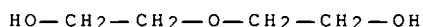
RN 401458-93-3 HCPLUS

CN 1,3-Isobenzofurandione, polymer with ethenylbenzene, 2,5-furandione,
 2,2'-oxybis[ethanol] and 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene (9CI)
 (CA INDEX NAME)

CM 1

CRN 111-46-6

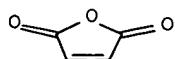
CMF C4 H10 O3



CM 2

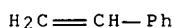
CRN 108-31-6

CMF C4 H2 O3



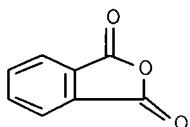
CM 3

CRN 100-42-5
 CMF C8 H8



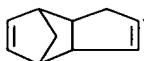
CM 4

CRN 85-44-9
 CMF C8 H4 O3



CM 5

CRN 77-73-6
 CMF C10 H12

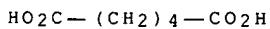


RN 401458-94-4 HCAPLUS

CN Hexanedioic acid, polymer with ethenylbenzene, 2,5-furandione, 1,3-isobenzofurandione, 2,2'-oxybis[ethanol] and 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene (9CI) (CA INDEX NAME)

CM 1

CRN 124-04-9
 CMF C6 H10 O4



CM 2

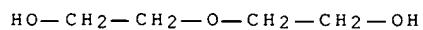
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PEZZUTO 10/655343

3/8/07

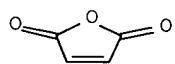
101

CMF C4 H10 O3



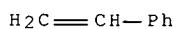
CM 3

CRN 108-31-6
CMF C4 H2 O3



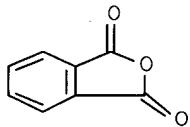
CM 4

CRN 100-42-5
CMF C8 H8



CM 5

CRN 85-44-9
CMF C8 H4 O3



CM 6

CRN 77-73-6
CMF C10 H12



L49 ANSWER 9 OF 17 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 2002:148673 HCAPLUS Full-text

DN 136:201366

TI Air-permeable waterproof durable covered structures and their application

IN Yamazaki, Takahide

PA Nippon Shokubai Kagaku Kogyo Co., Ltd., Japan; Japan Composite Co., Ltd.

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1.

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002059525	A	20020226	JP 2000-247553	20000817
	JP 3671138	B2	20050713		
PRAI	JP 2000-247553		20000817		

AB The structures contain fiber-reinforced resin waterproof layers consisting of thermosetting resins of dicyclopentenyl group-containing unsatd. polyesters and monomers and fiber reinforcements, porous air-permeable buffering layers, primer layers, and substrates. A concrete plate was coated with NS-YP (one-component urethane primer), covered with Panchishito P (nonwoven fabric), coated with a styrene composition containing 100 parts of unsatd. polyester from maleic anhydride dicyclopentadiene adduct, phthalic anhydride, and diethylene glycol, 0.5 part Co octenoate, and 1.0 part Kayamek M (curing agent), covered with the unsatd. polyester-impregnated glass mats, and top coated with a composition containing Epolac N 325 (unsatd. polyester) 100, Kayamek M 1, and Co octenoate 0.3 part to give a covered structure showing good air permeability, adhesion, durability, and fatigue resistance.

IC ICM B32B027-36

ICS E04D007-00

CC 38-3 (Plastics Fabrication and Uses)

ST air permeable waterproof durable covered structure; buffer glass fiber thermosetting resin durable; adhesion urethane primer unsatd polyester waterproof

IT Nonwoven fabrics

Primers (paints)

Water-resistant materials

(air-permeable waterproof durable covered structures and their application)

IT Glass fibers, uses

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(air-permeable waterproof durable covered structures and their application)

IT Reinforced plastics

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(fiber-reinforced, thermosetting; air-permeable waterproof durable covered structures and their application)

IT Polyesters, uses

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(unsatd.; air-permeable waterproof durable covered structures and their application)

IT 401632-27-7P 401632-29-9P 401632-31-3P

RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); TEM (Technical or

engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
 (air-permeable waterproof durable covered structures and their
 application)

IT 136108-72-0, Epolac N 325 395058-83-0, NS-YP
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP
 (Physical process); TEM (Technical or engineered material use); PROC
 (Process); USES (Uses)
 (air-permeable waterproof durable covered structures and their
 application)

IT 401632-27-7P 401632-29-9P 401632-31-3P
 RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical
 process); PRP (Properties); PYP (Physical process); TEM (Technical or
 engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
 (air-permeable waterproof durable covered structures and their
 application)

RN 401632-27-7 HCPLUS

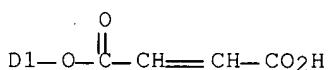
CN 2-Butenedioic acid (2Z)-, mono[3a,4,5,6,7,7a-hexahydro-4,7-methano-1H-
 inden-5(or 6)-yl] ester, polymer with ethenylbenzene, 1,3-
 isobenzofurandione and 2,2'-oxybis[ethanol] (9CI) (CA INDEX NAME)

CM 1

CRN 28347-17-3

CMF C14 H16 O4

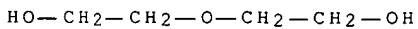
CCI IDS



CM 2

CRN 111-46-6

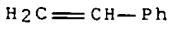
CMF C4 H10 O3



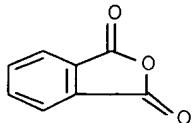
CM 3

CRN 100-42-5

CMF C8 H8



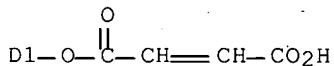
CM 4

CRN 85-44-9
CMF C8 H4 O3

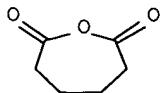
RN 401632-29-9 HCAPLUS

CN 2-Butenedioic acid (2Z)-, mono[3a,4,5,6,7,7a-hexahydro-4,7-methano-1H-inden-5(or 6)-1-yl] ester, polymer with ethenylbenzene, 1,3-isobenzofurandione, 2,7-oxepanedione and 2,2'-oxybis[ethanol] (9CI)
(CA INDEX NAME)

CM 1

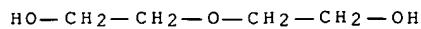
CRN 28347-17-3
CMF C14 H16 O4
CCI IDS

CM 2

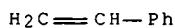
CRN 2035-75-8
CMF C6 H8 O3

CM 3

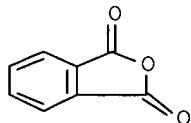
CRN 111-46-6
CMF C4 H10 O3



CM 4

CRN 100-42-5
CMF C8 H8

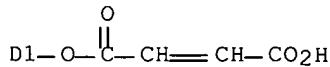
CM 5

CRN 85-44-9
CMF C8 H4 O3

RN 401632-31-3 HCPLUS

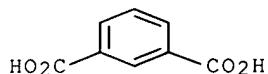
CN 1,3-Benzene dicarboxylic acid, polymer with ethenylbenzene,
3a,4,5,6,7,7a-hexahydro-4,7-methano-1H-inden-5(or 6)-yl hydrogen
(2Z)-2-butenedioate and 1,2-propanediol (9CI) (CA INDEX NAME)

CM 1

CRN 28347-17-3
CMF C14 H16 O4
CCI IDS

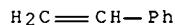
CM 2

CRN 121-91-5
CMF C8 H6 O4



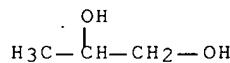
CM 3

CRN 100-42-5
 CMF C8 H8



CM 4

CRN 57-55-6
 CMF C3 H8 O2



L49 ANSWER 10 OF 17 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 2000:68209 HCAPLUS Full-text

DN 132:109002

TI Unsaturated polyester resin concrete compositions, and strong,
low shrinkage molded articles therefrom

IN Hashimoto, Yoshitomi; Kanai, Toshio; Furuya, Yutaka

PA Dainippon Ink and Chemicals, Inc., Japan

SO Eur. Pat. Appl., 10 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 974606	A2	20000126	EP 1999-114164	19990721
	EP 974606	A3	20010425		
	EP 974606	B1	20050706		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	CA 2277683	A1	20000122	CA 1999-2277683	19990719
	US 6221935	B1	20010424	US 1999-357656	19990720
	JP 2000095928	A	20000404	JP 1999-206070	19990721
	JP 3444242	B2	20030908		
	JP 2003286323	A	20031010	JP 2003-127689	19990721
	JP 2003301017	A	20031021	JP 2003-127690	19990721
	ES 2244125	T3	20051201	ES 1999-114164	19990721
	CN 1249314	A	20000405	CN 1999-122132	19990722
	CN 1127544	B	20031112		
PRAI	JP 1998-206346	A	19980722		

JP 1999-206070 A3 19990721

AB A title composition comprises (A) a resin composition containing (a) an unsatd. polyester of an unsatd. acid, a di- and/or trialkylene glycol, and dicyclopentadiene and (b) a polymerizable unsatd. monomer, (B) an aggregate, and (C) a filler. Preferably the unsatd. polyester contains 1-55% dicyclopentadiene. Preferably the composition comprises 80-60 parts (a) having number average mol. weight 400-1500, and 20-40 parts (b). The composition, even with a reduced resin content, has good flowability for molding, low shrinkage, and the molded article is strong and has no cracks. Thus, dicyclopentadiene-modified unsatd. polyester having number average mol. weight 600 was obtained by reacting 746 parts of dicyclopentadiene, 554 parts of maleic acid, 300 parts of diethylene glycol and 102 parts of water, terminating the reaction at acid value .apprx.40, and then adding 0.0800 parts toluhydroquinone and 0.0800 parts tert-butylcatechol. A resin concrete composition containing 98 parts of the unsatd. polyester, 42 parts styrene, 0.70 parts 6% cobalt naphthenate, 2.10 parts 55% Me Et ketone peroxide, 239 parts calcium carbonate, 239 parts silica sand Number 7 and 382 parts silica sand Number 4 was poured into a triple mortar mold, hardened at room temperature and kept for 7 days. The composition had resin content 14%, slump 170 mm, flexural strength 319 kgf/cm², compressive strength 1067 kgf/cm², linear shrinkage 0.33%, and no cracking around inserted portions, compared with 14, 170, 247, 1010, 0.34, and cracking, resp., for a polyester prepared with ethylene glycol instead of diethylene glycol.

IC ICM C08F283-01

ICS C04B026-18

CC 38-2 (Plastics Fabrication and Uses)

Section cross-reference(s): 58

ST dicyclopentadiene modified unsatd polyester concrete compn; molded article shrinkage resistant polymer concrete; styrene crosslinker dicyclopentadiene unsatd polyester concrete

IT Construction materials

(molded; unsatd. polyester concrete compns., and strong, low shrinkage molded articles therefrom)

IT Aggregates

Polymer concrete

(unsatd. polyester concrete compns., and strong, low shrinkage molded articles therefrom)

IT Sand

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(unsatd. polyester concrete compns., and strong, low shrinkage molded articles therefrom)

IT Molded plastics, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(unsatd. polyester concrete compns., and strong, low shrinkage molded articles therefrom)

IT Polyesters, uses

RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(unsatd.; unsatd. polyester concrete compns., and strong, low shrinkage molded articles therefrom)

IT 67815-74-1P, Dicyclopentadiene-maleic anhydride-styrene-triethylene glycol copolymer 201417-33-6P, Dicyclopentadiene-diethylene glycol-maleic anhydride-styrene copolymer

RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(unsatd. polyester concrete compns., and strong, low shrinkage molded articles therefrom)

IT 67815-74-1P, Dicyclopentadiene-maleic anhydride-styrene-triethylene glycol copolymer 201417-33-6P, Dicyclopentadiene-

diethylene glycol-maleic anhydride-styrene copolymer

RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (unsatd. polyester concrete compns., and strong, low shrinkage molded articles therefrom)

RN 67815-74-1 HCPLUS

CN 2,5-Furandione, polymer with 2,2'-[1,2-ethanediylbis(oxy)]bis[ethanol], ethenylbenzene and 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene (9CI) (CA INDEX NAME)

CM 1

CRN 112-27-6

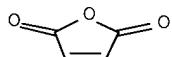
CMF C6 H14 O4



CM 2

CRN 108-31-6

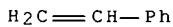
CMF C4 H2 O3



CM 3

CRN 100-42-5

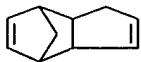
CMF C8 H8



CM 4

CRN 77-73-6

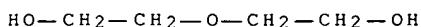
CMF C10 H12



RN 201417-33-6 HCPLUS

CN 2,5-Furandione, polymer with ethenylbenzene, 2,2'-oxybis[ethanol] and 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene (9CI) (CA INDEX NAME)

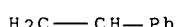
CM 1

CRN 111-46-6
CMF C4 H10 O3

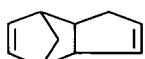
CM 2

CRN 108-31-6
CMF C4 H2 O3

CM 3

CRN 100-42-5
CMF C8 H8

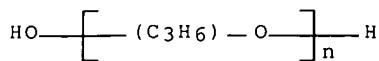
CM 4

CRN 77-73-6
CMF C10 H12

L49 ANSWER 11 OF 17 HCPLUS COPYRIGHT 2007 ACS on STN
 AN 1998:211211 HCPLUS Full-text
 DN 128:271805
 TI Corrosion- and water-resistant flexible vinyl ester polymer compositions
 and their concrete linings
 IN Aoki, Tomoaki; Yamazaki, Hitoshi; Namatame, Yutaka
 PA Hitachi Chemical Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese

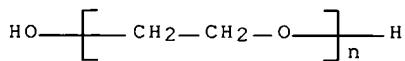
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10087764 JP 3775447	A B2	19980407 20060517	JP 1996-245268	19960917
PRAI	JP 1996-245268		19960917		
AB	<p>The compns. contain vinyl ester polymer compns. composed of 20-90% ethylenically unsatd. monomers and 10-80% unsatd. esters obtained from (A) polyalkylene glycol with OH value 35-400, (B) (un)saturated dibasic acids, (C) epoxy resins, and (D) unsatd. monobasic acids. A cured product from 100 g of a composition containing 70 parts unsatd. ester (X; obtained from Sannix PP 1000 1000, succinic anhydride 95, tetrahydrophthalic anhydride 144, R 140 720, and methacrylic acid 160 g) and 30 parts styrene (I), 0.5 g dimethylaniline (II), and 2.0 g 50% Bz202 paste showed tensile elongation 90% and good water and alkali resistances. A concrete lining containing X 65, I 35, II 0.1, 6% Co octenoate 0.5, MEK peroxide 1.0, and siliceous sand 250 parts showed good adhesion to concrete and heat-cycle resistance.</p>				
IC	ICM C08F290-06				
	ICS C09D004-00; C09D163-10; C09D167-06				
CC	42-11 (Coatings, Inks, and Related Products)				
	Section cross-reference(s): 58				
ST	vinyl ester polymer concrete lining; water alkali corrosion resistance concrete lining; epoxy polyoxyalkylene polyester concrete lining				
IT	Concrete (linings for; corrosion- and water-resistant flexible vinyl ester polymer compns. and concrete linings using them)				
IT	Coating materials (linings; corrosion- and water-resistant flexible vinyl ester polymer compns. and their concrete linings)				
IT	Polyesters, uses RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (unsatd.; corrosion- and water-resistant flexible vinyl ester polymer compns. and concrete linings using them)				
IT	205505-32-4P 205505-33-5P 205505-34-6P 205505-35-7P 205505-36-8P RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (corrosion- and water-resistant flexible vinyl ester polymer compns. and their concrete linings)				
IT	205505-34-6P RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (corrosion- and water-resistant flexible vinyl ester polymer compns. and their concrete linings)				
RN	205505-34-6 HCAPLUS				
CN	2-Propenoic acid, 2-methyl-, polymer with ethenylbenzene, α -hydro- ω -hydroxypoly(oxy-1,2-ethanediyl), α -hydro- ω -hydroxypoly[oxy(methyl-1,2-ethanediyl)], 2,2'-(1-methylethylidene)bis(4,1-phenyleneoxymethylene)bis[oxirane] and 3a,4,7,7a-tetrahydro-4,7-methanoisobenzofuran-1,3-dione (9CI) (CA INDEX NAME)				
	CM 1				
	CRN 25322-69-4				
	CMF (C ₃ H ₆ O) _n H ₂ O				
	CCI IDS, PMS				



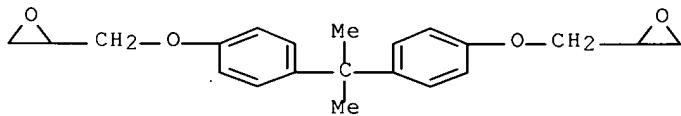
CM 2

CRN 25322-68-3
 CMF (C₂ H₄ O)_n H₂ O
 CCI PMS



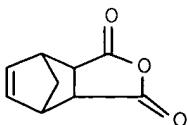
CM 3

CRN 1675-54-3
 CMF C₂₁ H₂₄ O₄



CM 4

CRN 826-62-0
 CMF C₉ H₈ O₃

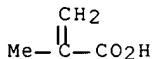


CM 5

CRN 100-42-5
 CMF C₈ H₈

H₂C = CH - Ph

CM 6

CRN 79-41-4
CMF C4 H6 O2

L49 ANSWER 12 OF 17 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 1997:449118 HCAPLUS Full-text

DN 127:136809

TI Fixing agents containing modified epoxy compounds for anchor bolts

IN Ito, Tomiji; Matsumura, Akira

PA Nippon Synthetic Chemical Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 09165567	A	19970624	JP 1995-347196	19951213
PRAI JP 1995-347196		19951213		

AB Title agents, useful in fixing anchor bolts into concrete, rocks, etc., contain epoxy compds. modified with 0.2-1.5 mol (A) partial esters of polyvalent carboxylic acids (PCA) with hydroxyalkyl (meth)acrylates or (B) partial adducts of PCA with alicyclic monomers as main components. The agents show high fixing strength without being affected by the surface conditions of holes of concrete, etc., and the strength is kept for a prolonged time. Thus, a fixing agent containing 1580 g modified epoxy compound with acid value 6.9 mg KOH/g [prepared from 3-methyltetrahydrophthalic anhydride 1.59, 2-hydroxypropyl methacrylate 1.59, YD 128 (epoxy compd) 2.66, and methacrylic acid 3.73 mol], 700 g styrene, and Bz202 showed maximum fixing strength 8.3 ton with variance 0.3 ton among 5 samples.

IC ICM C09J163-00

ICS C08G059-14; C09J004-00; E21D020-00

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 58

ST anchor bolt fixing acrylic epoxy resin; methyltetrahydrophthalic acid ester hydroxypropyl methacrylate bolt; polyvalent carboxylic acid alicyclic monomer adduct; concrete rock bolt fixing epoxy resin

IT Epoxy resins, uses

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(acrylic; fixing agents containing modified epoxy compds. showing high fixing strength with less variance for anchor bolts)

IT Bolts

(anchor; fixing agents containing modified epoxy compds. showing high fixing strength with less variance for anchor bolts)

IT Adhesives

Concrete

(fixing agents containing modified epoxy compds. showing high fixing strength with less variance for anchor bolts)

IT Rocks

RL: MSC (Miscellaneous)

(fixing agents containing modified epoxy compds. showing high fixing strength with less variance for anchor bolts)

IT 192948-24-6P 192948-26-8P 192948-28-0P 192948-30-4P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(fixing agents containing modified epoxy compds. showing high fixing strength with less variance for anchor bolts)

IT 192948-28-0P 192948-30-4P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(fixing agents containing modified epoxy compds. showing high fixing strength with less variance for anchor bolts)

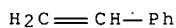
RN 192948-28-0 HCPLUS

CN 2,5-Furandione, polymer with (chloromethyl)oxirane, 4,4'-(1-methylethyldene)bis[phenol] and 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene, 2-methyl-2-propenoate, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 100-42-5

CMF C8 H8



CM 2

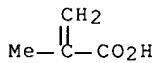
CRN 192948-27-9

CMF (C15 H16 O2 . C10 H12 . C4 H2 O3 . C3 H5 Cl O)x . x C4 H6 O2

CM 3

CRN 79-41-4

CMF C4 H6 O2



CM 4

CRN 192871-03-7

CMF (C15 H16 O2 . C10 H12 . C4 H2 O3 . C3 H5 Cl O)x

CCI PMS

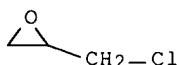
CM 5

CRN 108-31-6

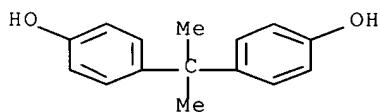
CMF C4 H2 O3



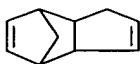
CM 6

CRN 106-89-8
CMF C3 H5 Cl O

CM 7

CRN 80-05-7
CMF C15 H16 O2

CM 8

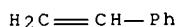
CRN 77-73-6
CMF C10 H12

RN 192948-30-4 HCPLUS

CN 4-Cyclohexene-1,2-dicarboxylic acid, 3-methyl-, mono[1-methyl-2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl] ester, polymer with (chloromethyl)oxirane, 2,5-furandione, 4,4'-(1-methylethylidene)bis[phenol] and 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene, 2-methyl-2-propenoate, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 100-42-5
CMF C8 H8



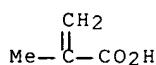
CM 2

CRN 192948-29-1

CMF (C₁₆ H₂₂ O₆ . C₁₅ H₁₆ O₂ . C₁₀ H₁₂ . C₄ H₂ O₃ . C₃ H₅ Cl O)x . x C₄ H₆ O₂

CM 3

CRN 79-41-4

CMF C₄ H₆ O₂

CM 4

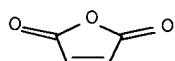
CRN 192871-04-8

CMF (C₁₆ H₂₂ O₆ . C₁₅ H₁₆ O₂ . C₁₀ H₁₂ . C₄ H₂ O₃ . C₃ H₅ Cl O)x

CCI PMS

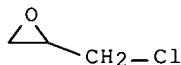
CM 5

CRN 108-31-6

CMF C₄ H₂ O₃

CM 6

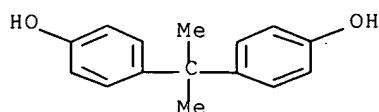
CRN 106-89-8

CMF C₃ H₅ Cl O

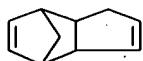
CM 7

CRN 80-05-7

CMF C₁₅ H₁₆ O₂



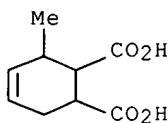
CM 8

CRN 77-73-6
CMF C10 H12

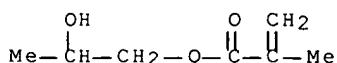
CM 9

CRN 192871-00-4
CMF C16 H22 O6
CCI IDS

CM 10

CRN 15941-50-1
CMF C9 H12 O4

CM 11

CRN 923-26-2
CMF C7 H12 O3

L49 ANSWER 13 OF 17 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 1996:111612 HCAPLUS Full-text

DN 124:178467

TI Alkali-resistant adhesives with excellent cold-temperature strength for anchoring bolts

KATHLEEN FULLER EIC1700 571-272-2505

IN Ito, Tomiji; Watanabe, Yoshikuni
 PA Nippon Synthetic Chemical Industry Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 07286156	A	19951031	JP 1994-104896	19940418
	JP 3619538	B2	20050209		
PRAI	JP 1994-104896		19940418		

AB The adhesives contain (a) unsatd. polyesters obtained by polycondensation of polyhydric alcs. with polybasic carboxylic acids and (b) tris(hydroxyethyl) isocyanurate tri(meth)acrylate, pentaerythritol tri(meth)acrylate, and/or dipentaerythritol (I) hexa(meth)acrylate. Thus, 100 parts unsatd. polyester (prepared by polycondensation of 6.2 mol fumaric acid with bisphenol A-propylene oxide adduct 1.4, tricyclo[5.2.1.0^{2,6}]decanedimethanol 1.4, 1,4-cyclohexanedimethanol 1.2, and propylene glycol 3.5 mol) was mixed with I hexaacrylate 12, dimethylaniline 1.1, and hydroquinone 0.5 part and diluted with styrene to prepare a polymer solution (nonvolatiles content 67%), 8.8 parts of which was mixed with natural silica sand and 0.45 part Bz202 (50%)-containing CaSO₄ to prepare an adhesive. When a bolt was inserted into concrete in a hole filled with the composition and aged at 10° for 48 h, the maximum pulling strength was 7.9 tons. A cured molding from the composition showed weight change 5.1% when immersed in 10% NaOH aqueous solution at 100° for 100 h.

IC ICM C09J167-06

ICS C08F283-01; E04B001-41; E21D020-00

CC 38-3 (Plastics Fabrication and Uses)

ST alkali resistance bolt anchoring compn; unsatd polyester blend adhesive; fumaric acid polycondensate compn; bisphenol A propylene oxide polycondensate adhesive; tricyclodecanedimethanol polycondensate blend; cyclohexanedimethanol polycondensate blend adhesive; styrene reactive diluent adhesive; dipentaerythritol hexaacrylate crosslinking agent

IT Alkali-resistant materials

(adhesives with high cold-temperature strength for anchoring bolts)

IT Adhesives

(alkali-resistant adhesives with high cold-temperature strength for anchoring bolts)

IT 173926-69-7P 173926-70-0P 173926-71-1P

173926-72-2P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(alkali-resistant adhesives with high cold-temperature strength for anchoring bolts)

IT 173926-69-7P 173926-70-0P 173926-71-1P

173926-72-2P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(alkali-resistant adhesives with high cold-temperature strength for anchoring bolts)

RN 173926-69-7 HCPLUS

CN 2-Butenedioic acid (2E)-, polymer with 1,4-cyclohexanedimethanol,

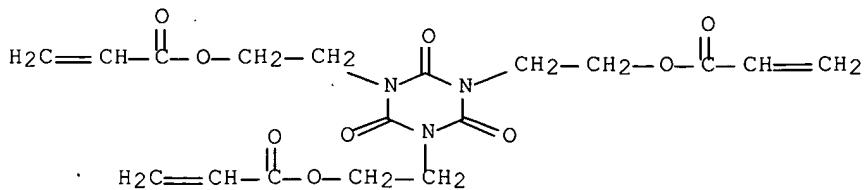
ethenylbenzene, α,α' -[(1-methylethylidene)di-4,1-phenylene]bis[ω -hydroxypoly[oxy(methyl-1,2-ethanediyl)]],

octahydro-4,7-methano-1H-indene-5,?-dimethanol, 1,2-propanediol and

(2,4,6-trioxo-1,3,5-triazine-1,3,5(2H,4H,6H)-triyl)tri-2,1-ethanediyl
tri-2-propenoate (9CI) (CA INDEX NAME)

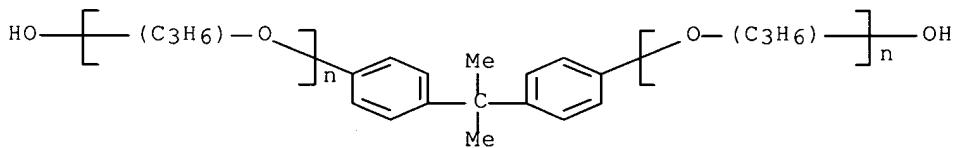
CM 1

CRN 40220-08-4
CMF C18 H21 N3 O9



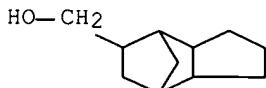
CM 2

CRN 37353-75-6
CMF (C₃H₆O)_n (C₃H₆O)_n C₁₅H₁₆O₂
CCI IDS, PMS



CM 3

CRN 26160-83-8
CMF C₁₂H₂₀O₂
CCI IDS

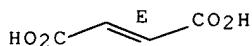


D1-CH₂-OH

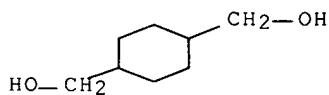
CM 4

CRN 110-17-8
CMF C₄H₄O₄

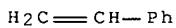
Double bond geometry as shown.



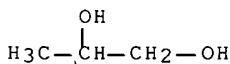
CM 5

CRN 105-08-8
CMF C8 H16 O2

CM 6

CRN 100-42-5
CMF C8 H8

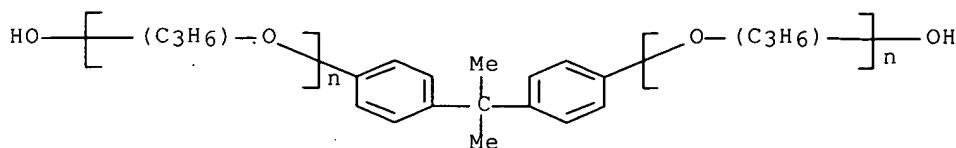
CM 7

CRN 57-55-6
CMF C3 H8 O2

RN 173926-70-0 HCPLUS
 CN 2-Butenedioic acid (2E)-, polymer with 1,4-cyclohexanedimethanol, ethenylbenzene, 2-(hydroxymethyl)-2-[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate, α,α' -[(1-methylethylidene)di-4,1-phenylene]bis[ω -hydroxypoly[oxy(methyl-1,2-ethanediyl)]], octahydro-4,7-methano-1H-indene-5,7-dimethanol and 1,2-propanediol (9CI) (CA INDEX NAME)

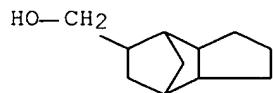
CM 1

CRN 37353-75-6
CMF (C3 H6 O)n (C3 H6 O)n C15 H16 O2
CCI IDS, PMS



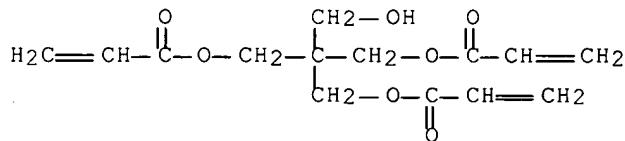
CM 2

CRN 26160-83-8
 CMF C12 H20 O2
 CCI IDS

D1—CH₂—OH

CM 3

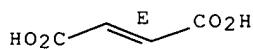
CRN 3524-68-3
 CMF C14 H18 O7



CM 4

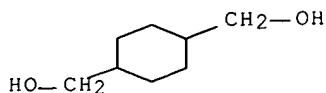
CRN 110-17-8
 CMF C4 H4 O4

Double bond geometry as shown.

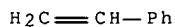


CM 5

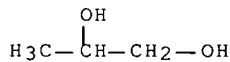
CRN 105-08-8
 CMF C8 H16 O2



CM 6

CRN 100-42-5
CMF C8 H8

CM 7

CRN 57-55-6
CMF C3 H8 O2

RN 173926-71-1 HCAPLUS

CN 2-Butenedioic acid (2E)-, polymer with 1,4-cyclohexanedimethanol, ethenylbenzene, α,α' -[(1-methylethylidene)di-4,1-phenylene]bis[ω -hydroxypoly[oxy(methyl-1,2-ethanediyl)]], octahydro-4,7-methano-1H-indene-5,?-dimethanol, 2-[{3-[{(1-oxo-2-propenyl)oxy]-2,2-bis[[{(1-oxo-2-propenyl)oxy]methyl}propoxy]methyl}-2-{[(1-oxo-2-propenyl)oxy]methyl}-1,3-propanediyl di-2-propenoate and 1,2-propanediol (9CI) (CA INDEX NAME)

CM 1

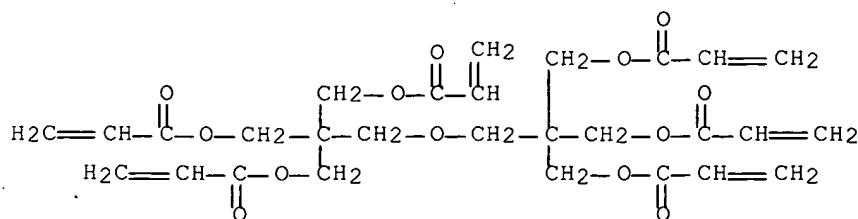
CRN 37353-75-6
CMF (C₃ H₆ O)_n (C₃ H₆ O)_n C₁₅ H₁₆ O₂
CCI IDS, PMS

Chemical structure of a polymer repeat unit. It features a central carbon atom bonded to two phenyl groups (one with a methyl group, one with a dimethyl group) and two ether-linked hydrocarbon chains. Each chain starts with a hydroxyl group (HO-) and ends with a hydroxyl group (-OH), with a central oxygen atom (O-C₃H₆-O-) connecting the two chains.

CM 2

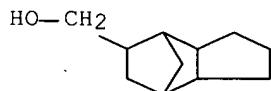
CRN 29570-58-9
CMF C₂₈ H₃₄ O₁₃

KATHLEEN FULLER EIC1700 571-272-2505



CM 3

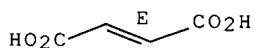
CRN 26160-83-8
 CMF C12 H20 O2
 CCI IDS

D1—CH₂—OH

CM 4

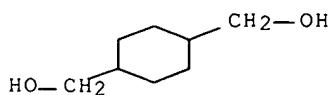
CRN 110-17-8
 CMF C4 H4 O4

Double bond geometry as shown.



CM 5

CRN 105-08-8
 CMF C8 H16 O2

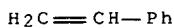


CM 6

CRN 100-42-5

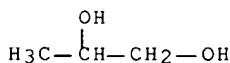
KATHLEEN FULLER EIC1700 571-272-2505

CMF C8 H8



CM 7

CRN 57-55-6
CMF C3 H8 02

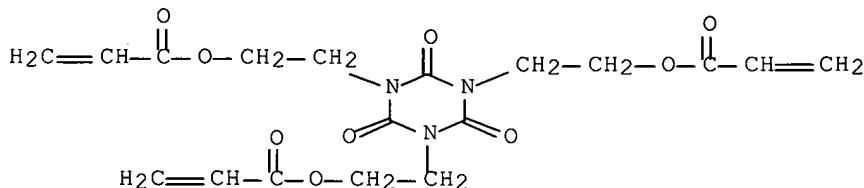


RN 173926-72-2 HCAPLUS

CN 2-Butenedioic acid (2E)-, polymer with 1,4-cyclohexanedimethanol, ethenylbenzene, 2-(hydroxymethyl)-2-[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate, α,α' -[(1-methylethylidene)di-4,1-phenylene]bis[ω -hydroxypoly[oxy(methyl-1,2-ethanediyl)]], octahydro-4,7-methano-1H-indene-5,7-dimethanol, 1,2-propanediol and (2,4,6-trioxo-1,3,5-triazine-1,3,5(2H,4H,6H)-triyl)tri-2,1-ethanediyl tri-2-propenoate (9CI) (CA INDEX NAME)

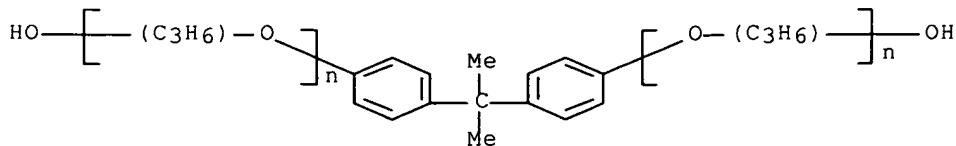
CM 1

CRN 40220-08-4
CMF C18 H21 N3



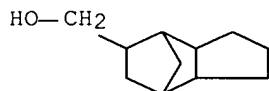
CM 2

CRN 37353-75-6
CMF (C3 H6 O)n (C3 H6 O)n C15 H16 O2
CCI IDS, PMS



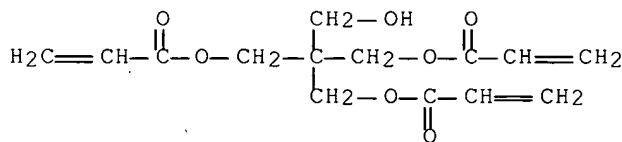
CM 3

CRN 26160-83-8
 CMF C12 H20 O2
 CCI IDS

D1—CH₂—OH

CM 4

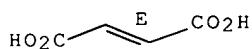
CRN 3524-68-3
 CMF C14 H18 O7



CM 5

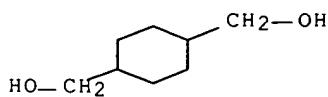
CRN 110-17-8
 CMF C4 H4 O4

Double bond geometry as shown.

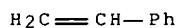


CM 6

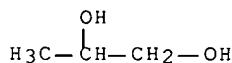
CRN 105-08-8
 CMF C8 H16 O2



CM 7

CRN 100-42-5
CMF C8 H8

CM 8

CRN 57-55-6
CMF C3 H8 O2

L49 ANSWER 14 OF 17 HCPLUS COPYRIGHT 2007 ACS on STN

AN 1996:82977 HCPLUS Full-text

DN 124:119770

TI Fixing agents for anchor bolts

IN Ito, Tomiji; Watanabe, Yoshikuni

PA Nippon Synthetic Chem Ind, Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 07292340	A	19951107	JP 1994-113827	19940427
PRAI JP 1994-113827		19940427		

AB Title agents, used in fixing of anchor bolts into substrates such as concrete, comprise unsatd. polyesters containing 3-methyltetrahydrophthalic anhydride (I). Thus, fumaric acid 4.3, I 1.84, bisphenol A propylene oxide adduct 1.53, 1,4-cyclohexanedimethanol 1.53, neopentyl glycol 0.61, and propylene glycol 3.44 mol were polymerized in the presence of 0.02% hydroquinone to give an unsatd. polyester, 1000 parts of which was blended with styrene 490, diethylaniline 8, and methylhydroquinone 0.15 part to give a composition. Then, 50% CaSO₄ solution of 0.45 part Bz2O₂, 8.8 parts the composition, and natural silica sand were blended to give a fixing agent showing good fixation strength and alkali resistance.

IC ICM C09J167-06

ICS C08G063-54; E21D020-00

ICA E04B001-41

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 58

ST bolt fixation unsatd polyester alkali resistance

IT Alkali-resistant materials

Bolts

Concrete

(unsatd. polyester-based fixing agents for bolts)

IT Polyesters, uses

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or

KATHLEEN FULLER EIC1700 571-272-2505

engineered material use); PREP (Preparation); USES (Uses)
 (unsatd., unsatd. polyester-based fixing agents for bolts)

IT 173353-10-1P 173353-11-2P 173353-12-3P 173353-13-4P
 173353-14-5P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or
 engineered material use); PREP (Preparation); USES (Uses)
 (unsatd. polyester-based fixing agents for bolts)

IT 173353-14-5P

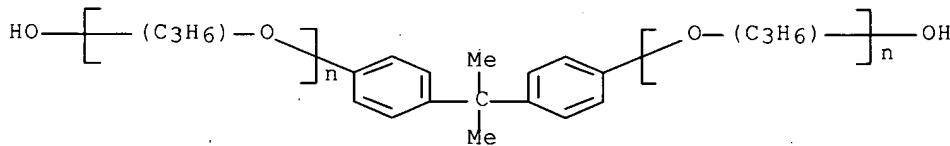
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or
 engineered material use); PREP (Preparation); USES (Uses)
 (unsatd. polyester-based fixing agents for bolts)

RN 173353-14-5 HCAPLUS

CN 2-Butenedioic acid (2E)-, polymer with 1,4-cyclohexanedimethanol,
 2,2-dimethyl-1,3-propanediol, ethenylbenzene, α,α' -[(1-methylethylidene)di-4,1-phenylene]bis[ω -hydroxypoly[oxy(methyl-1,2-ethanediyl)]], octahydro-4,7-methano-1H-indene-5,7-dimethanol,
 1,2-propanediol and 3a,4,7,7a-tetrahydro-4-methyl-1,3-isobenzofurandione
 (9CI) (CA INDEX NAME)

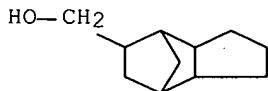
CM 1

CRN 37353-75-6
 CMF (C₃H₆O)n (C₃H₆O)n C₁₅H₁₆O₂
 CCI IDS, PMS



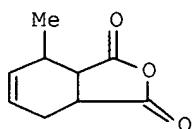
CM 2

CRN 26160-83-8
 CMF C₁₂H₂₀O₂
 CCI IDS

D1-CH₂-OH

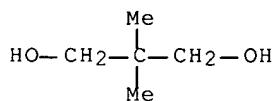
CM 3

CRN 5333-84-6
 CMF C₉H₁₀O₃



CM 4

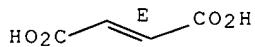
CRN 126-30-7
 CMF C5 H12 O2



CM 5

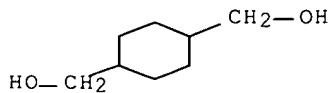
CRN 110-17-8
 CMF C4 H4 O4

Double bond geometry as shown.



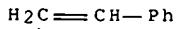
CM 6

CRN 105-08-8
 CMF C8 H16 O2

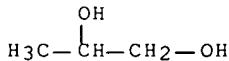


CM 7

CRN 100-42-5
 CMF C8 H8



CM 8

CRN 57-55-6
CMF C3 H8 O2

L49 ANSWER 15 OF 17 HCPLUS COPYRIGHT 2007 ACS on STN

AN 1993:497619 HCPLUS Full-text

DN 119:97619

TI Adhesives for fixing bolts in concrete

IN Ito, Tomiji; Watanabe, Yoshikuni

PA Nippon Synthetic Chem Ind, Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05051572	A	19930302	JP 1991-237233	19910823
JP 06078513	B	19941005		

PRAI JP 1991-237233 19910823

AB The title adhesives, curable at low temperature and showing good strength and alkali resistance after curing, comprise unsatd. polyesters prepared from polyhydric alcs. containing tricyclodecanedimethanol (I) or I and alkoxylated bisphenol A. An adhesive containing fumaric acid-I copolymer, styrene, and Bz202 cured during 21, 38, 67, or 165 min at 20, 10, 5, and 0°, resp., and the cured adhesive showed weight loss during 50 h in 10% aqueous NaOH at 100° 0.8%. An anchor bolt fixed in concrete with a mixture of the unsatd. polyester and sand showed maximum pull-out resistance 8.5 ton and 1-mm pull-out resistance 5.2 ton after 20 h aging at ambient temperature

IC ICM C09J167-06

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 55, 58

ST unsatd polyester adhesive bolt concrete;
tricyclodecanedimethanol polyester adhesive bolt concrete;
alkoxylate bisphenol adhesive bolt concrete; alkali resistance
adhesive bolt concrete

IT Concrete

(adhesives for fixing anchor bolts in, unsatd. polyester-containing)

IT Alkali-resistant materials

(adhesives, unsatd. polyester-containing, for bolts in concrete)

IT Adhesives

(unsatd. polyesters, for fixing anchor bolts in concrete)

IT Bolts

(anchor, fixing of, in concrete, unsatd. polyester-based
adhesives for)

IT Polyesters, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(unsatd., adhesives, crosslinked, alkali-resistant, for bolts in
concrete)IT 149343-72-6 149343-73-7 149343-74-8
149343-75-9 149343-76-0

RL: TEM (Technical or engineered material use); USES (Uses)
 (adhesives, crosslinked, alkali-resistant, for bolts in
 concrete)

IT 149343-72-6 149343-73-7 149343-74-8
 149343-75-9 149343-76-0

RL: TEM (Technical or engineered material use); USES (Uses)
 (adhesives, crosslinked, alkali-resistant, for bolts in
 concrete)

RN 149343-72-6 HCPLUS

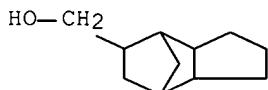
CN 2-Butenedioic acid (2E)-, polymer with ethenylbenzene and
 octahydro-4,7-methano-1H-indene-5,?-dimethanol (9CI) (CA INDEX NAME)

CM 1

CRN 26160-83-8

CMF C12 H20 O2

CCI IDS



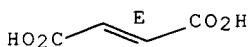
D1—CH₂—OH

CM 2

CRN 110-17-8

CMF C4 H4 O4

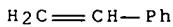
Double bond geometry as shown.



CM 3

CRN 100-42-5

CMF C8 H8



RN 149343-73-7 HCPLUS

CN 2-Butenedioic acid (2E)-, polymer with ethenylbenzene,
 octahydro-4,7-methano-1H-indene-5,?-dimethanol and 1,2-propanediol (9CI)
 (CA INDEX NAME)

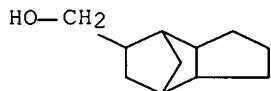
CM 1

PEZZUTO 10/655343

3/8/07

130

CRN 26160-83-8
CMF C12 H20 O2
CCI IDS

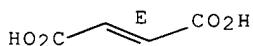


D1- CH₂- OH

CM 2

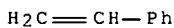
CRN 110-17-8
CMF C4 H4 O4

Double bond geometry as shown.



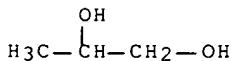
CM 3

CRN 100-42-5
CMF C8 H8



CM 4

CRN 57-55-6
CMF C3 H8 O2



RN 149343-74-8 HCAPLUS

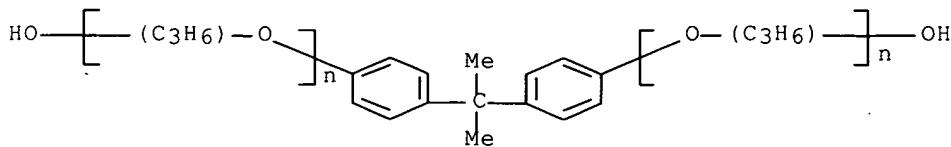
CN 2-Butenedioic acid (2E)-, polymer with ethenylbenzene,
 α,α' -[(1-methylethylidene)di-4,1-phenylene]bis[ω -
hydroxypoly[oxy(methyl-1,2-ethanediyl)]] and octahydro-4,7-methano-1H-
indene-5,?-dimethanol (9CI) (CA INDEX NAME)

CM 1

CRN 37353-75-6

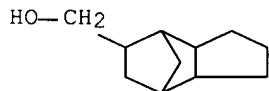
KATHLEEN FULLER EIC1700 571-272-2505

CMF (C₃H₆O)_n (C₃H₆O)_n C₁₅H₁₆O₂
 CCI IDS, PMS



CM 2

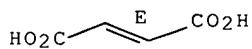
CRN 26160-83-8
 CMF C₁₂H₂₀O₂
 CCI IDS

D1—CH₂—OH

CM 3

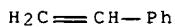
CRN 110-17-8
 CMF C₄H₄O₄

Double bond geometry as shown.



CM 4

CRN 100-42-5
 CMF C₈H₈



RN 149343-75-9 HCPLUS

CN 2,5-Furandione, polymer with ethenylbenzene, α,α' -[(1-methylethylidene)di-4,1-phenylene]bis[ω -hydroxypoly[oxy(methyl-1,2-ethanediyl)]], octahydro-4,7-methano-1H-indene-5,7-dimethanol and 1,2-propanediol (9CI) (CA INDEX NAME)

PEZZUTO 10/655343

3/8/07

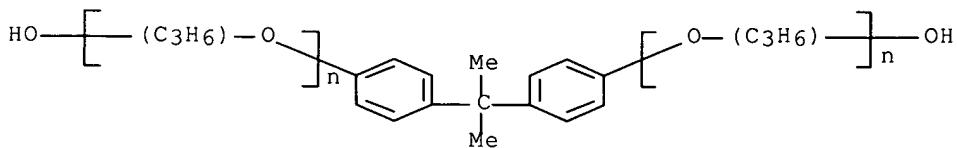
132

CM 1

CRN 37353-75-6

CMF (C₃ H₆ O)_n (C₃ H₆ O)_n C₁₅ H₁₆ O₂

CCI IDS, PMS

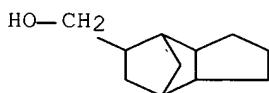


CM 2

CRN 26160-83-8

CMF C₁₂ H₂₀ O₂

CCI IDS



D1-CH₂-OH

CM 3

CRN 108-31-6

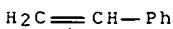
CMF C₄ H₂ O₃



CM 4

CRN 100-42-5

CMF C₈ H₈

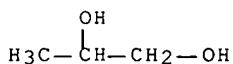


CM 5

CRN 57-55-6

KATHLEEN FULLER EIC1700 571-272-2505

CMF C3 H8 O2.



RN 149343-76-0 HCPLUS

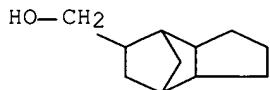
CN 2,5-Furandione, polymer with ethenylbenzene, octahydro-4,7-methano-1H-indene-5,7-dimethanol, 1,2-propanediol and 3-(2-propenyloxy)-2,2-bis[(2-propenyloxy)methyl]-1-propanol (9CI) (CA INDEX NAME)

CM 1

CRN 26160-83-8

CMF C12 H20 O2

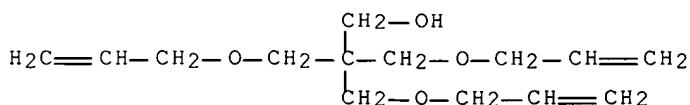
CCI IDS

D1- CH₂- OH

CM 2

CRN 1471-17-6

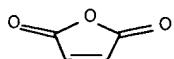
CMF C14 H24 O4



CM 3

CRN 108-31-6

CMF C4 H2 O3

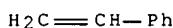


CM 4

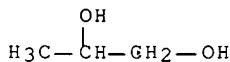
CRN 100-42-5

KATHLEEN FULLER EIC1700 571-272-2505

CMF C8 H8



CM 5

CRN 57-55-6
CMF C3 H8 O2

L49 ANSWER 16 OF 17 HCPLUS COPYRIGHT 2007 ACS on STN

AN 1992:450268 HCPLUS Full-text

DN 117:50268

TI Polymer concrete compositions

IN Hashino, Shizuo; Ishizaki, Koji; Ogino, Takeshi; Igarashi, Taizo

PA Nippon Oil and Fats Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 04021553	A	19920124	JP 1990-124549	19900515
PRAI JP 1990-124549		19900515		

AB The title compns., with good adhesion to aggregates and processability and giving cured products with good dimensional stability and toughness, comprise partial esters of polyols with unsatd. carboxylic acids 30-55, ester from epoxy adducts with alcs. and unsatd. carboxylic acids 20-40, esters from diols, unsatd. carboxylic acids, and saturated carboxylic acid 10-35, comonomers 0-15, and oily polymers 1-15%. Thus, a mixture of hydroxypropyl methacrylate (I) 30, glycerol dimethacrylate (II) 10, tetraethylene glycol Me ether methacrylate 19, polypropylene glycol nonylphenyl ether acrylate 10, 2:5:2 fumaric acid-hexanediol-terephthalic acid ester 16,-2:2:1 acrylic acid-neopentyl glycol-sebacic acid ester 5, propylene glycol dimethacrylate 5, 25:75 Me methacrylate-styrene copolymer 5, and aggregate (silica and CaCO₃) 730 parts when cured had compressive strength 910 kg/cm², flexural strength 280 kg/cm², and molding shrinkage 0.03%; vs. 700, 200, and 0.04, resp., without I and II.

IC ICM C04B026-04

ICS C08L035-02

CC 38-3 (Plastics Fabrication and Uses)

ST acrylic polymer concrete; methacrylate copolymer concrete; polyester polymer concrete; styrene copolymer concrete; polyoxyalkylene acrylate polymer concrete

IT Polymer concrete

(binders for, acrylic polymers and oily polymers as, for high strength)

IT 24937-78-8, Ethylene-vinyl acetate copolymer 25034-86-0, Methyl methacrylate-styrene copolymer 142233-45-2 142233-48-5
142276-23-1 142292-64-6 142292-65-7 142393-80-4

KATHLEEN FULLER EIC1700 571-272-2505

RL: USES (Uses)

(binders, for polymer concrete with high strength)

IT 142276-23-1 142393-80-4

RL: USES (Uses)

(binders, for polymer concrete with high strength)

RN 142276-23-1 HCAPLUS

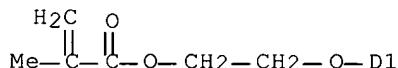
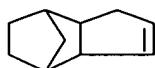
CN 2-Butenedioic acid (2E)-, polymer with 1,4-benzeneddicarboxylic acid, 2-[[3a,4,5,6,7,7a-hexahydro-4,7-methano-1H-inden-5(or 6)-yl]oxy]ethyl 2-propenoate, 1,6-hexanediol, (1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] di-2-propenoate, α,α' -[(1-methylethylidene)di-4,1-phenylene]bis[ω -hydroxypoly[oxy(1,2-ethanediyl)]], 2-methyl-2-propenoic acid, α -(2-methyl-1-oxo-2-propenyl)- ω -methoxypoly(oxy-1,2-ethanediyl) and 1,2-propanediol mono(2-methyl-2-propenoate) (9CI) (CA INDEX NAME)

CM 1

CRN 68169-03-9

CMF C16 H22 O3

CCI IDS

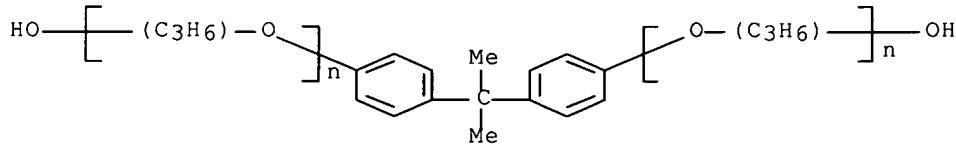


CM 2

CRN 37353-75-6

CMF $(\text{C}_3\text{ H}_6\text{ O})_n$ $(\text{C}_3\text{ H}_6\text{ O})_n$ C15 H16 O2

CCI IDS, PMS

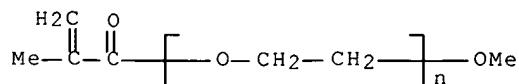


CM 3

CRN 26915-72-0

CMF $(\text{C}_2\text{ H}_4\text{ O})_n$ C5 H8 O2

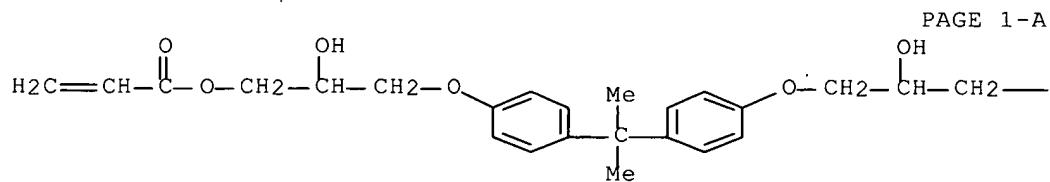
CCI PMS



CM 4

CRN 4687-94-9

CMF C27 H32 O8



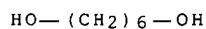
PAGE 1-B



CM 5

CRN 629-11-8

CMF C6 H14 O2

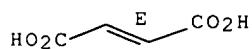


CM 6

CRN 110-17-8

CMF C4 H4 O4

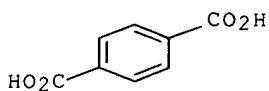
Double bond geometry as shown.



CM 7

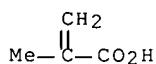
CRN 100-21-0

CMF C8 H6 O4



CM 8

CRN 79-41-4
 CMF C4 H6 O2

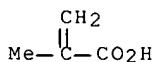


CM 9

CRN 27813-02-1
 CMF C7 H12 O3
 CCI IDS

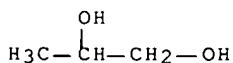
CM 10

CRN 79-41-4
 CMF C4 H6 O2



CM 11

CRN 57-55-6
 CMF C3 H8 O2



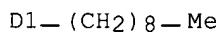
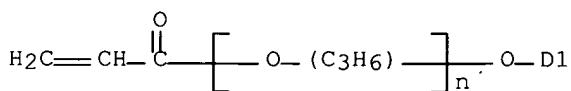
RN 142393-80-4 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, polymer with (2E)-2-butenedioic acid, decanedioic acid, 2,2-dimethyl-1,3-propanediol, 2-[3a,4,5,6,7,7a-hexahydro-4,7-methano-1H-inden-5(or 6)-yl]oxyethyl 2-methyl-2-propenoate, 1,6-hexanediol, α -(1-oxo-2-propenyl)- ω -(nonylphenoxy)poly[oxy(methyl-1,2-ethanediyl)], 1,2-propanediol mono(2-methyl-2-propenoate), 1,2,3-propanetriol bis(2-methyl-2-propenoate) and 2-propenoic acid (9CI) (CA INDEX NAME)

CM 1

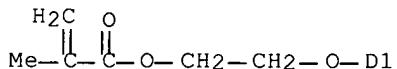
KATHLEEN FULLER EIC1700 571-272-2505

CRN 71926-19-7
 CMF (C₃ H₆ O)_n C₁₈ H₂₆ O₂
 CCI IDS, PMS



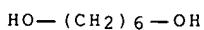
CM 2

CRN 68169-03-9
 CMF C₁₆ H₂₂ O₃
 CCI IDS



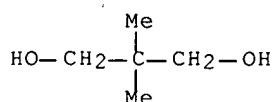
CM 3

CRN 629-11-8
 CMF C₆ H₁₄ O₂



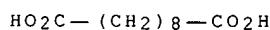
CM 4

CRN 126-30-7
 CMF C₅ H₁₂ O₂



CM 5

CRN 111-20-6
 CMF C10 H18 O4



CM 6

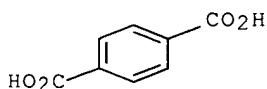
CRN 110-17-8
 CMF C4 H4 O4

Double bond geometry as shown.



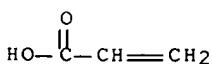
CM 7

CRN 100-21-0
 CMF C8 H6 O4



CM 8

CRN 79-10-7
 CMF C3 H4 O2

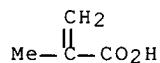


CM 9

CRN 28497-59-8
CMF C11 H16 O5
CCI IDS

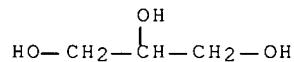
CM 10

CRN 79-41-4
CMF C4 H6 O2



CM 11

CRN 56-81-5
CMF C3 H8 O3

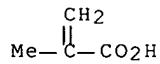


CM 12

CRN 27813-02-1
CMF C7 H12 O3
CCI IDS

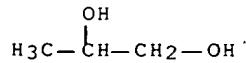
CM 13

CRN 79-41-4
CMF C4 H6 O2



CM 14

CRN 57-55-6
CMF C3 H8 O2



AN 1985:561495 HCAPLUS Full-text

DN 103:161495

TI Polyester-polyamide concrete with high tensile and compressive strength for curing in the presence of water

IN Hefner, Robert E., Jr.

PA Dow Chemical Co., USA

SO PCT Int. Appl., 45 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 8501948 W: BR, JP, KR JP 60501415 JP 04000941 BR 8407138 AU 8434625 AU 564511 EP 149028 EP 149028	A1 T B A A B2 A2 A3	19850509 19850829 19920109 19851008 19850509 19870813 19850724 19860827	WO 1984-US1689 JP 1984-503935 BR 1984-7138 AU 1984-34625 EP 1984-112832	19841018 19841018 19841018 19841024 19841024
PRAI	US 1983-544763 US 1984-643571 WO 1984-US1689	A A W	19831024 19840823 19841018	IL 1984-73296 ZA 1984-8669	19841024 19841106

AB Curable polymer concrete contains 98-80% aggregate and 2-20% polymer from norbornyl-modified, unsatd. polyester-polyamide 20-80, vinyl monomers 20-80, and comonomers 0-60%. Thus, maleic anhydride 7940, H2O 1600, dicyclopentadiene (96%) 9630, 11.17% piperazine solution in propylene glycol 3750, hydroquinone 2.75, and styrene 12,803 g gave a polyester-polyamide which was mixed with 40% styrene. The solution (277 g) was mixed with PhNMe2 1.00, Bz2O2 1.00, and 50:50 volume % number 3 and number 4 blasting sand 1108 g. After molding and postcuring 3 days at 25°, the polymer concrete had compressive strength 307 (dry) and 150 kg/cm² (wet), compared to 213 and 151, resp., for a dicyclopentadiene-modified, unsatd. polyester.

IC ICM C08L067-06

ICS C08L063-10; C08L075-04

CC 38-3 (Plastics Fabrication and Uses)

ST polyester polyamide polymer concrete; maleic anhydride polyester concrete; dicyclopentadiene copolymer concrete; piperazine polyester concrete; styrene copolymer concrete; propanediol polyester concrete

IT Polymer concrete

(unsatd. polyester-polyamides for)

IT Polyesters, uses and miscellaneous

RL: USES (Uses)

(polyamide-, polymer concrete)

IT Polyamides, uses and miscellaneous

RL: USES (Uses)

(polyester-, polymer concrete)

IT 68992-75-6 94898-91-6 98701-71-4 98701-72-5

98701-73-6 98701-74-7 98701-75-8

RL: USES (Uses)

(polymer concrete)

IT 94898-91-6 98701-71-4 98701-72-5

98701-73-6 98701-74-7

RL: USES (Uses)

(polymer concrete)

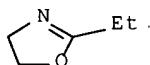
RN 94898-91-6 HCAPLUS

CN 2,5-Furandione, polymer with ethenylbenzene, 2-ethyl-4,5-dihydrooxazole, piperazine, 1,2-propanediol and 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene (9CI) (CA INDEX NAME)

CM 1

CRN 10431-98-8

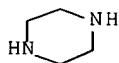
CMF C5 H9 N O



CM 2

CRN 110-85-0

CMF C4 H10 N2



CM 3

CRN 108-31-6

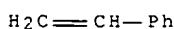
CMF C4 H2 O3



CM 4

CRN 100-42-5

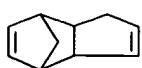
CMF C8 H8



CM 5

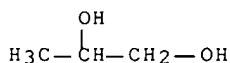
CRN 77-73-6

CMF C10 H12



CM 6

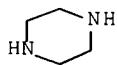
CRN 57-55-6
 CMF C3 H8 O2



RN 98701-71-4 HCPLUS
 CN 2,5-Furandione, polymer with ethenylbenzene, piperazine, 1,2-propanediol and 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene (9CI) (CA INDEX NAME)

CM 1

CRN 110-85-0
 CMF C4 H10 N2



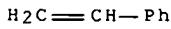
CM 2

CRN 108-31-6
 CMF C4 H2 O3



CM 3

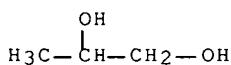
CRN 100-42-5
 CMF C8 H8



CM 4

CRN 77-73-6
CMF C10 H12

CM 5

CRN 57-55-6
CMF C3 H8 O2

RN 98701-72-5 HCAPLUS

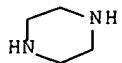
CN 2,5-Furandione, polymer with ethenylbenzene, 2-methyl-1,3-butadiene,
methyl-1,3-cyclopentadiene, piperazine, 1,2-propanediol and
3a,4,7,7a-tetrahydro-4,7-methano-1H-indene (9CI) (CA INDEX NAME)

CM 1

CRN 26519-91-5
CMF C6 H8
CCI IDS

D1-Me

CM 2

CRN 110-85-0
CMF C4 H10 N2

PEZZUTO 10/655343

3/8/07

145

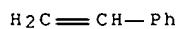
CM 3

CRN 108-31-6
CMF C4 H2 O3



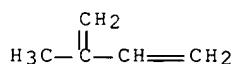
CM 4

CRN 100-42-5
CMF C8 H8



CM 5

CRN 78-79-5
CMF C5 H8



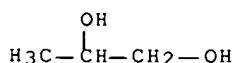
CM 6

CRN 77-73-6
CMF C10 H12



CM 7

CRN 57-55-6
CMF C3 H8 O2



RN 98701-73-6 HCAPLUS

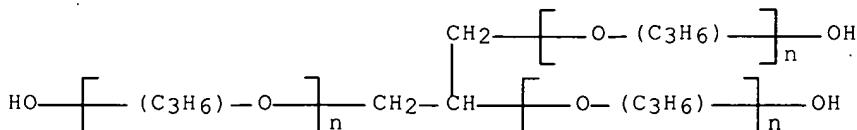
CN 2,5-Furandione, polymer with ethenylbenzene, piperazine, 1,2-propanediol, $\alpha,\alpha',\alpha''-1,2,3$ -propanetriyltris[ω -hydroxypoly[oxy(methyl-1,2-ethanediyl)]] and 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene (9CI) (CA INDEX NAME)

CM 1

CRN 25791-96-2

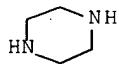
CMF (C₃H₆O)_n (C₃H₆O)_n (C₃H₆O)_n C₃H₈O₃

CCI IDS, PMS



CM 2

CRN 110-85-0

CMF C₄H₁₀N₂

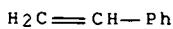
CM 3

CRN 108-31-6

CMF C₄H₂O₃

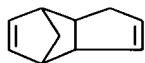
CM 4

CRN 100-42-5

CMF C₈H₈

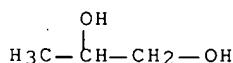
CM 5

CRN 77-73-6
 CMF C10 H12



CM 6

CRN 57-55-6
 CMF C3 H8 O2

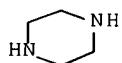


RN 98701-74-7 HCPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene, ethenylbenzene,
 2,5-furandione, piperazine, 1,2-propanediol and 3a,4,7,7a-tetrahydro-4,7-
 methano-1H-indene (9CI) (CA INDEX NAME)

CM 1

CRN 110-85-0
 CMF C4 H10 N2



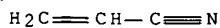
CM 2

CRN 108-31-6
 CMF C4 H2 O3

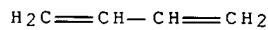


CM 3

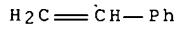
CRN 107-13-1
 CMF C3 H3 N



CM 4

CRN 106-99-0
CMF C4 H6

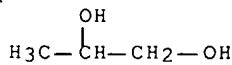
CM 5

CRN 100-42-5
CMF C8 H8

CM 6

CRN 77-73-6
CMF C10 H12

CM 7

CRN 57-55-6
CMF C3 H8 O2

=>